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NETWORKWORLD

OUR 13TH ANNUAL LOOK AT THE MOST POWERFUL PEOPLE, COMPANIES AND IDEAS IN THE NETWORK INDUSTRY

- 50 MOST POWERFUL PEOPLE
- 10 MOST POWERFUL COMPANIES
- 6 INDUSTRY-DEFINING POWER STRUGGLES, AND MORE...

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_INFRASTRUCTURE LOG

_DAY 34: This indecision is sinking the business. How do we move to a service oriented architecture? Where do we start? Can we reuse what we have? Can we integrate existing apps like SAP and Oracle?

_Infrastructure quicksand!! We waited too long. I'd throw Gil my tie, but it's a clip-on.

_DAY 37: A lifeline: IBM WebSphere middleware! It's already helped thousands of customers build an SOA. Adapters give us a standardized approach to integrating apps from SAP, Oracle and others. It lets us reuse what we have, saving time and money. And WebSphere even lets us build an SOA at our own pace, so we can deliver new services as needed.

_Oh, great. There's sand in my yogurt.

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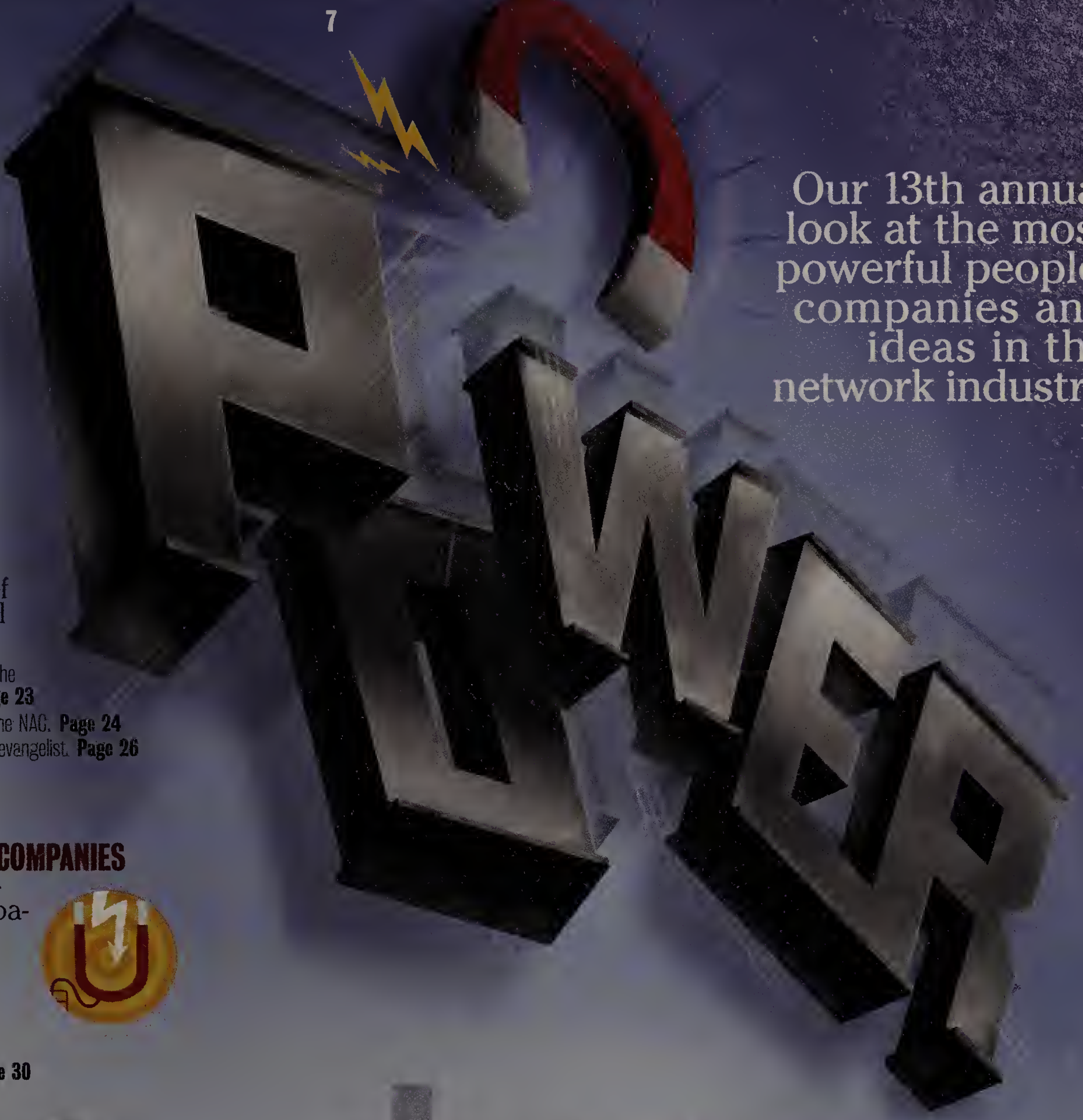

Our 13th annual look at the most powerful people, companies and ideas in the network industry

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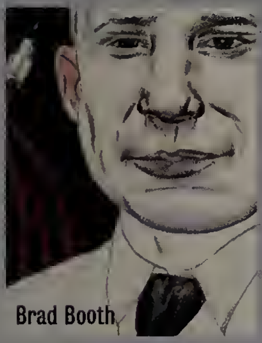
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Donna Manley

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POWER IN YOUR HANDS. Join this special forum to tell us how you'd change the network industry, and corporate America, given the chance. www.nwdocfinder.com/6632

POWER 50, one by one. Click through the 50 most powerful people in networking by category in this slideshow. www.nwdocfinder.com/6631

POWER MERGERS. In 2006, scores of companies joined forces to tackle critical networking challenges of coming years. We look at four of the biggest. www.nwdocfinder.com/6621

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SIX POWER MOVES OF '06

How a handful of the year's biggest moves by enterprises and vendors will play out in 2007

BY DENISE DUBIE

From start to finish, 2006 was filled with one sort of power move after another. As expected, we saw enterprise IT executives bolster their technology infrastructures by ripping out the old and bringing in the new and, presumably, more powerful. We saw Cisco, Microsoft, VMware and scores of other vendors fortifying their product strategies and reaching into new markets, often by acquisition. And we watched standards bodies, regulatory and other governmental agencies, and various corporate entities assert themselves on IT issues.

Here we look at how six such power moves, by enterprises and vendors alike, will play out in 2007.

ANDY POTTS

TEXAS UNIVERSITY POWERS UP WITH OPEN SOURCE

This year, network executives at Sam Houston State University (SHSU) made one of the most powerful decisions an enterprise IT buyer can make — to oust a legacy vendor in favor of an open source competitor. The university began moving its 6,000 students, faculty and staff from Cisco CallManager IP PBXs and a Nortel Meridian PBX to Linux servers running Asterisk, which includes call-processing, voice mail and public-network gateway functionality.

This open source move lets SHSU operate its Cisco IP phones with more flexibility and at one-third the price, says Aaron Daniel, senior voice analyst at the Huntsville, Texas, school. While the open source alternative requires more on-site development expertise, Daniel says the tradeoff is worth it.

"The open source community has been an invaluable resource, but when it comes down to it, if you have competent developers, you can fix open source yourself, and support becomes less of an issue," Daniel says. He also says the capabilities in products such as Asterisk should serve as a bellwether for vendors such as Cisco.

"From where I am sitting, it looks like closed-source solutions providers are starting to shake in their boots," Daniel says. "If they don't change their tune with practices and pricing, they are going to fall behind. Open source is here, it's gaining steam and it's happening in enterprise-grade deployments."

CISCO BUILDS ITS VIDEO PRESENCE

Cisco flexed its muscle in many ways this year, but especially interesting for its long-term implications was its show of might in the IP video fight. In a move industry watchers define as defensive, Cisco in October 2006 pulled the covers off its long-awaited TelePresence video communications technology — a combination of life-size displays and high-definition IP video.

"I have never seen Cisco react so quickly as it did to Microsoft's unified communications platform," says Zeus Kerravala, a Yankee Group vice president.

Cisco's ultimate goal, he says, is to sell TelePresence to carriers for IPTV and content distribution networks. The technology would then trickle down to consumers — a user market Cisco desperately wants to tap.

"Cisco has no more market share to steal in its core enterprise area. The consumer area is where the company sees growth and it is moving there," Kerravala says. "2007 is going to be a year of transition for Cisco. The company is looking to change from 'the network provider' to a mainstream consumer application-oriented product provider and wants to be more in [the user's] face."

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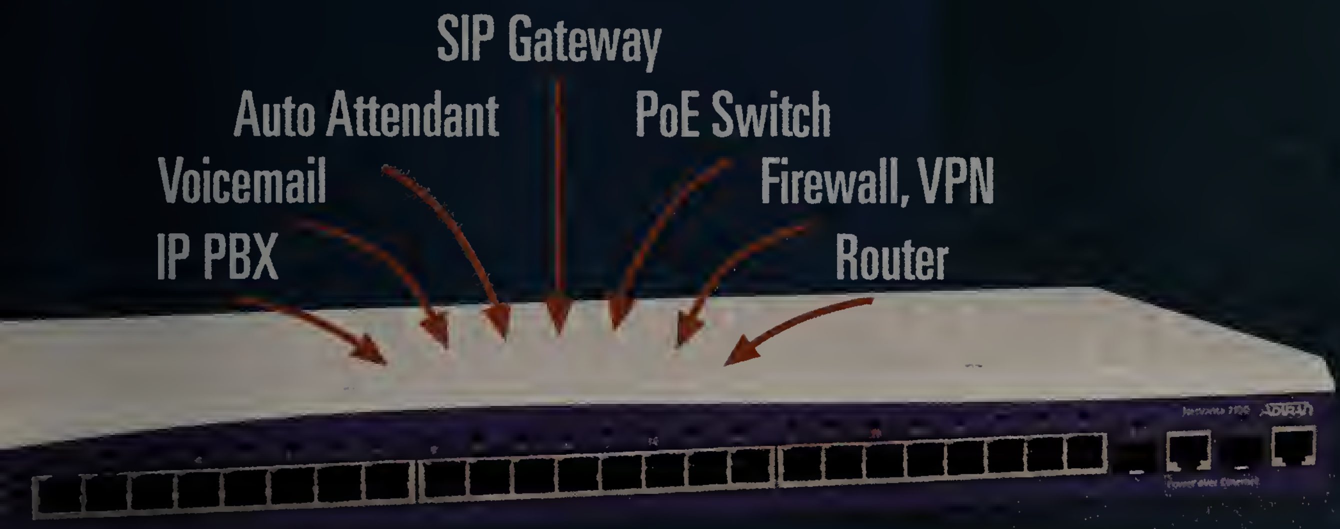

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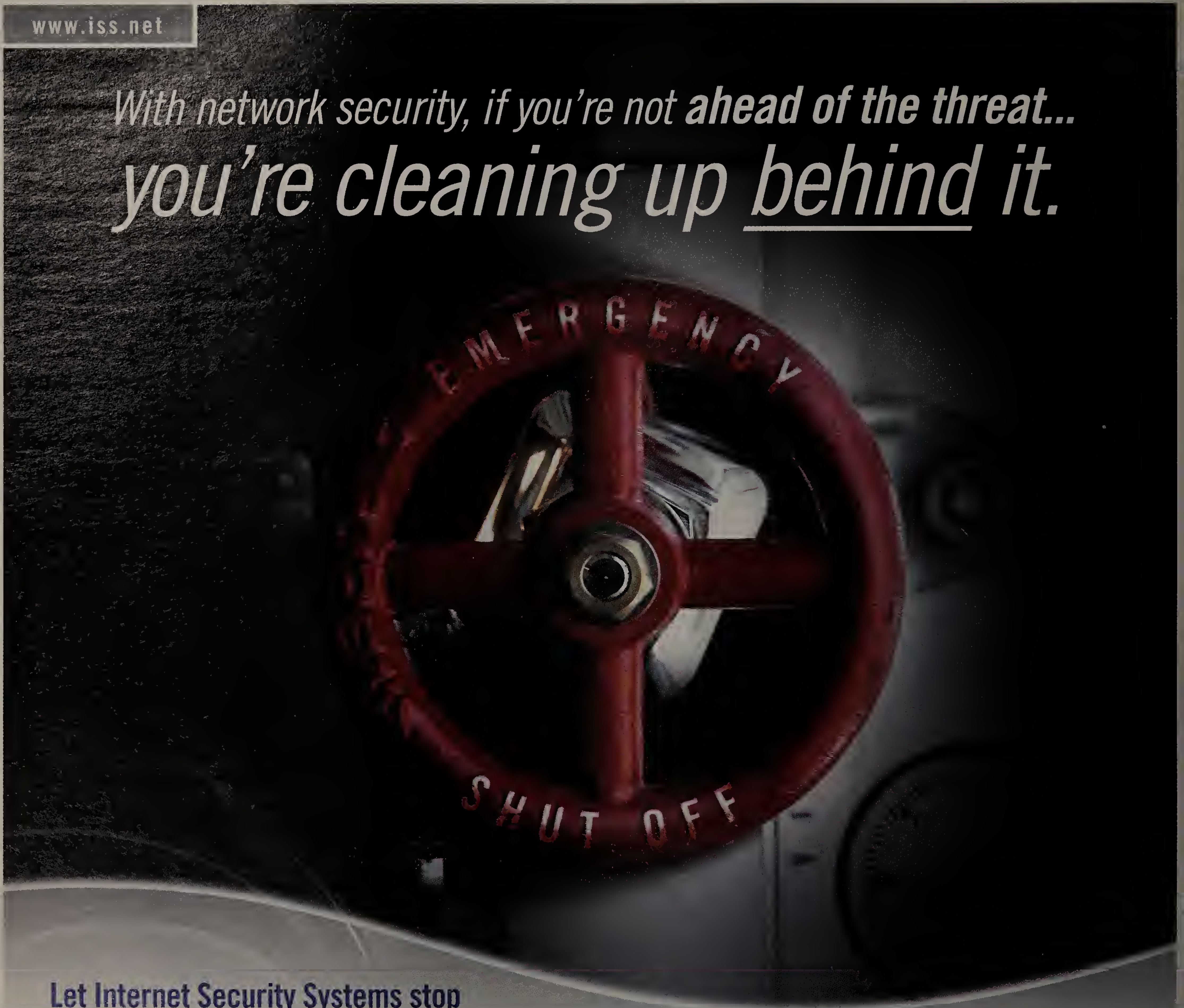
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Moves

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MICROSOFT'S BIG VOICE GAMBIT

Microsoft forged a four-year strategic alliance with Nortel in a move industry watchers say could turn it into a serious voice contender in a way the company could not do on its own. Through their Innovative Communications Alliance (ICA), announced in July 2006, the companies will jointly develop, sell and deploy unified communications and VoIP technology to enterprises. ICA proposes to transform Nortel's VoIP features and call-control technology into software modules that will run on top of, or alongside, Microsoft unified communications servers. The companies also will develop technology to accelerate and prioritize Microsoft/Nortel unified communications traffic running on top of Nortel LAN, WAN and wireless network equipment.

For enterprise customers, the joint development could ultimately deliver voice mail, e-mail, calendar, mobility and other technologies in a unified format. "Enterprise customers could centralize communications and get economies of scale on their investments. Today many of those technologies are provided by multiple vendors, but if one vendor could unify them, that would deliver efficiencies," says Matt Cain, a Gartner vice president. "Everything is wildly immature and unknown at Microsoft on the voice side, but that is where Nortel comes in and gives Microsoft the credibility," he says.

MICROSOFT STAKES ITS ENTERPRISE SEARCH CLAIM

In another power play, Microsoft made clear it isn't going to let Google, Yahoo or anyone else grab enterprise search business without a challenge. Toward that end, the company talked up how search features being developed in Office SharePoint Server 2007 and Windows Vista would integrate with a new desktop version of Windows Live Search and the MSN Internet service of the same name.

"Search is at a crossroads in the enterprise and Microsoft simply cannot ignore it — nor can anybody," says Whit Andrews, a Gartner vice president. "Today everyone wants to interact with the data via a search box, no longer with menus or other means. The search box interface is as iconic now as point-and-click, menu-driven and command-line were for previous generations."

Desktop search tools use local processing power to locate items inside e-mail and data stores. Three of the most popular are available for free from Google, MSN and Yahoo. Most industry watchers agree the products aid productivity: From a single interface, users can quickly search the text of their e-mail, contacts, application documents, data files, multimedia files and more.

"We are going to see an increased emphasis from Microsoft in 2007 on unification of its search perspective," Andrews says. "No one will be able to top Microsoft — except Google — in its ability to deliver search capabilities on the desktop, enterprise and the Web."

VMWARE MUSCLES UP AS COMPETITION INCREASES

With server virtualization encroachers coming from all corners, VMware strengthened its leadership position with release of its third-generation product, VMware Infrastructure 3. The package includes updated versions of ESX Server and VirtualCenter management tools and VMotion technology for running virtual machines among physical servers. And, it's the first step in VMware's efforts to provide enhanced services on top of an increasingly reliable virtual foundation. The company has shifted its focus from providing an individual hypervisor that lets multiple operating systems run on a single physical system, to managing a collection of virtual machines running on those servers, to talking about virtualization across the data center and mapping applications dynamically to those resources, company officials say.

"We are proposing a completely new way of running the data center," says Raghu Raghuram, VMware's vice president of platform products.

That's great news for users such as Mitch Davis, CIO at Bowdoin College in Brunswick, Maine, who want more from their virtualized server infrastructures. Already 60% virtual today, Bowdoin expects to have more than 80% of its infrastructure virtualized in a year, Davis says. The university is advancing its use of virtualization, too. For example, it is working with Loyola Marymount University in Los Angeles to build out disaster-recovery and business-continuity sites at each other's locations based on a virtual solution, he says. "This [type of cooperation] would not have been possible without virtualization," he adds.

ENTERPRISES BEAR DOWN IN ON ACCOUNTABILITY

With the world watching, many companies delivered a powerful message about data leaks and privacy as they axed top IT staff in response to security incidents.

AOL, Ohio University and the Department of Veterans Affairs made such moves. AOL fired a researcher and a manager, and the CTO resigned after the company posted data on search queries made by 650,000 subscribers. Ohio University dismissed two senior IT people following news of five security vulnerabilities that exposed the sensitive records of 137,000 alumni. And, when a laptop containing data on 26 million veterans fell into a burglar's hands, the analyst who took that laptop home was fired. The ongoing examination of the agency's security practices has led to the departure of several other VA employees, including the CISO.

While the Sarbanes-Oxley Act and other regulatory standards kicked off this trend, the corporate bottom line will keep it going through 2007, says John Pescatore, a Gartner vice president.

"If 80,000 customers have data exposed and stop doing business with your organization, someone needs to take the fall," he says. "Now when the technology fails, the CTO, CIO will be gone. It's hard to say there is a silver lining, but there will be more attention paid to what needs to be done to protect the organization in every way." ■

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> "SEARCH IS AT A CROSSROADS IN THE ENTERPRISE AND MICROSOFT SIMPLY CAN'T IGNORE IT — NOR CAN ANYBODY."
>
> **WHIT ANDREWS,** vice president, Gartner

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THE 50 MOST POWERFUL PEOPLE IN N

Our annual, wide-ranging look at the influential and persuasive personalities giving shape t

POWER ELITE >

• John Chambers // chairman and CEO, Cisco

By unanimous decision, the Cisco board in June granted Chambers supreme command of the company, naming him successor to the exiting chairman, John Morgridge. Clearly the board is confident in Chambers' ability to finesse a new and different future for Cisco, one in which consumer IP gadgets might just be as important as enterprise switches. Witness Chambers' ultra high-tech Cisco Field aspirations for the Oakland A's — what better way to stamp the company's name into the average Joe's consciousness than to serve up a laptop with a cold beer?

• Larry Ellison // CEO, Oracle

Network World newsletter author Dave Kearns, an independent consultant, uses the nickname "the pirate" when referring to Ellison — and for good reason. In 2006, Ellison caused a furor among the press and blogsphere with speculation of how Oracle would get into the Linux action. Rumors flew that Oracle was considering acquiring Novell, spurred when Ellison said about as much in an interview in London's *Financial Times*. In October, he revealed his trick. He is muscling into Red Hat's action by undercutting the company's support prices, in an offering called Unbreakable Linux. If the software industry were a tennis match, then Ellison would earn set point for his Linux plan.

• Bill Gates // chairman, Microsoft

During a June news conference, Gates observed that the world tends to focus a disproportionate amount of attention on him. Hello? Gates, one of the world's wealthiest individuals, oversees a company with the most pervasive technology of modern times. Of course the world watches him closely to see how he uses his power. And even as Gates loosens his corporate ties to focus more on his considerable charitable work, he won't be shaking off that mantle of power anytime soon. He is — and probably always will be — a technology thought-leader.

• Sam Palmisano // chairman and CEO, IBM

In May, Palmisano rang the bell to open a day's trading at the New York Stock Exchange in celebration of the 90th anniversary for IBM's listing. But these days Palmisano is less concerned about IBM, the American icon, than he is about the "I," for international. He convened IBM's annual employee meeting outside the United States — a first for the company — holding it in India to emphasize how much attention he is giving there. He promised to triple investment in India to $6 billion over the next three years. Those funds will cover initiatives such as a new research organization for delivering global services.

• Ivan Seidenberg // chairman and CEO, Verizon

Seidenberg sure does love his fiber and his video — but then again, he's got to bulk up on those two broadband technologies to keep Verizon a powerful competitor on all market fronts. He's got his nationwide carrier, and his pervasive wireless. What's wrong with a little IPTV? Nothing — or so he asserted early in 2006 while testifying before the Senate Commerce Committee about how Verizon has proven the need for local TV franchising reform. Seidenberg's powerful message: "The time for a national, streamlined franchising process is now, because the era of broadband video is here."

• Joe Tucci // chairman, president and CEO, EMC

Let's call Tucci a master cultivator. Over the last five years, he has shown the tech world how to acquire and successfully grow companies. Under his care, EMC is flourishing as it grows well beyond its traditional storage hardware roots and into a diverse software company with document management, systems management, virtualization and, with this year's buyout of RSA Security, security management offshoots. With financials blooming too, Tucci's thorniest challenge going forward will be getting Wall Street to appreciate the EMC garden.

• Edward Whitacre // chairman and CEO, the new AT&T

This Bell System career man continues his aggressive battle against the market tides pulling traditional telecom companies down. This time his buoy is the fast-growing wireless services business of Cingular Wireless, the joint venture company AT&T will gain control of through its BellSouth acquisition (still awaiting the FCC's go-ahead as of press time). Whitacre will certainly go down in the industry record books as power broker extraordinaire if he can successfully integrate the Cingular wireless infrastructure with the traditional wired networks and deliver desirable advanced, converged IP services to enterprises and consumers.

ETWORKING

the network industry. **BY JULIE BORT AND BETH SCHULTZ**

ENTERPRISE NETWORK EXECUTIVES >

• David Barnes // senior vice president and CIO, UPS

Barnes didn't get to where he is — head of a $1 billion IT operation of nearly 5,000 people — without an industry-leading technology vision. He uses four criteria for making technology decisions: The project must be customer-driven; it must connect to UPS' core competency; the business model must be clear; and the culture must embrace it. Barnes put grid computing to that test, and liked what he found. UPS has powered up a Linux-based grid infrastructure to distribute a billing invoice application that once ran on an expensive mainframe.

• Robert Carter // CIO, FedEx

As top IT guy for the $32 billion shipping company, Carter is well known as a technology leader. This year, he showed how top IT roles are turning into top business management roles when he became chairman of the rapidly expanding FedEx Kinko's. He also completed a three-year infrastructure overhaul for FedEx that streamlined IT operations, smoothing out the complexities that arose from fast expansion and numerous acquisitions.

• Tom Gergets // director of networks & infrastructure, McDonald's U.S.A.

All eyes are on Gergets and his massive hot spot deployment. Three years into the rollout, he has brought Wi-Fi to more than 7,500 of the fast-food giant's 13,700 U.S. restaurants. For McDonald's, the deployment offers a new technology-based revenue stream from Internet access fees. It gives franchisees the infrastructure for cutting-edge back-office applications. For the network industry, the rollout to the company's rural-area restaurants puts McDonald's in the unusual position to offer pervasive, nationwide high-speed Internet access.

• Chad Mead // global head of security event management, JPMorgan Chase

In the 18 months since taking on this role, Mead has powered up the firm's ability to manage security events — 150,000 per second — by in-sourcing various processes and creating two 24/7 security management centers. A firm believer that "information is power," Mead is passionate about sharing lessons learned, an obligation he says comes with any IT leadership position, so he speaks frequently at conferences hosted by the SANS Institute, the Association of Information Technology Professionals and others. Mead also believes in em\powering young people and is a board member of LeaderSpark, an Ohio organization that helps teens develop leadership skills.

• John Partridge // president and CEO, Inovant

Partridge has led Inovant, Visa's global IT arm, through a technology upgrade so major that it redefines the reliable, real-time transaction. In 2006 his team completed a five-year upgrade of Visa's 30-year-old global authorization engine. With the new engine, each of the 100 million transactions Visa processes daily requires only 1.4 seconds, even while accessing back-end Web services such as those for fraud detection. But the $2 trillion worth of transactions Visa processes each year is peanuts compared with the $21 trillion of cash and checks out there, he says. His emerging technology framework should let Visa capture more of that cash market with newfangled payment capabilities and rewards programs. Along the way, he's redefining IT.

• Ralph Szygenda // CIO, GM

As head IT honcho at the world's largest automaker, Szygenda's leadership has helped define IT's role in the enterprise. In 2006, he was at it again, divvying up a five-year, $15 billion outsourcing contract among six providers. Such outsourcing co-opetition is a strategy he dubbed the "third-generation outsourcing model." It combines the cost-cutting advantages of outsourcing with the motivational force of competition and could be the next big model for enterprise outsourcing.

• Fred Wettling // technology strategy manager, Bechtel

Wettling carried on as IPv6's poster child, widely sharing his technical expertise on this next-generation protocol. In the last year, he's overseen deployment of IPv6 on hundreds of computers on Bechtel's global network, and is now using IPv6 for routing across the company WAN in several North American offices. Plus he is exploring IPv6 for use in emerging areas of industrial networking, machine-to-machine technology and sensors. "And yes," he says, "there are several wired and wireless IPv6 network cameras as part of the current pilot."

See People, page 16

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_INFRASTRUCTURE LOG

_DAY 25: They're in the cafeteria!! AAAGGGHHH!! These useless things can't work with each other. They aren't scalable. They aren't responsive. And you can't adjust new capacity on the fly. The horror.

_So many of them, I have to eat standing up. My arches are killing me. And I got avocado on my shirt.

_DAY 26: The answer: IBM BladeCenter® with Dual-Core Intel® Xeon® Processors to boost performance and balance workloads. Its self-automating features make it easy to manage, and it has more blades per chassis for a smaller footprint. The BladeCenter even opened up its specs, so the things we buy today can work with the things we buy tomorrow.

_I can eat my turkey-avocado sandwiches in peace again. Mmmmm...

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ENTERPRISE COMPUTING >

• Steve Ballmer // CEO, Microsoft

Ballmer has pulled out all the stops on Linux, culminating in the surprise partnership that had Novell agreeing to co-develop a Windows/Linux hybrid with Microsoft even as he declared that the GNU/Linux infringes on Microsoft's intellectual property. As part of the Novell agreement, he promised that Microsoft will not sue SUSE users and developers and then declared that if others want to avoid this threat, they too should partner with Microsoft. His chutzpah caused an angry backlash among open sourcers and put the new Novell CEO in hot water. Meanwhile, he is being no less aggressive toward Google, competing in every arena from advertising sales on MSN to Web services.

• Diane Greene // president, VMware

Greene may be quiet and humble, but you can be sure she won't take kindly to being bested in the virtualization industry she created. So watch out Microsoft, Novell, open source providers and other upstarts. Greene's gambits for standardization, chip-level support and automated management have shown she's not just progressive, but a fighter.

• Mark Hurd // chairman and CEO, HP

For Hurd, 2006 will go down as a year of great embarrassment and great triumph. His ascension to chairman was overshadowed by the notorious boardroom spying scandal that brought down his predecessor. But Hurd's power remained relatively unaffected, even through a congressional investigation and charges brought against others involved. Meanwhile, he triumphantly released fiscal 2006 revenue of $91.7 billion, which may have been enough to snag the title of world's largest network company away from IBM.

• Bob Moffat // senior vice president, Integrated Operations, IBM

In what some consider the most important transition of IBM's services business, the company this year powered up a strategy to sell standardized packaged services rather than requiring a company to contract for a customized services package. The services fall under four umbrellas — converged communications; networking strategy and optimization; mobility, wireless and RFID; and network integration and management. Moffat, already having streamlined IBM's internal supply-chain operations, is the man behind this critical professional-services initiative.

• Paul Otellini // president and CEO, Intel

If Otellini had his own slogan it might be, "More is as good as Moore." His answer to Intel's source for future growth — find a billion more PC users. He thinks that billion awaits in developing countries, and so has pledged to invest $1 billion over the next five years to bring PC technology to less technological societies. As his tribute to Moore's Law, Otellini triumphed in November when Dell, HP, IBM and others released quad-core-powered computers using Intel's Xeon 5300s. Archrival Advanced Micro Devices is not expected to match the quad-core feat until mid 2007.

• Hector Ruiz // chairman and CEO, Advanced Micro Devices

Ruiz spent the past year hammering on his "customer choice" theme, most recently delivering that message during Oracle's fall OpenWorld conference. That Ruiz netted a top billing at the event, which had previously not highlighted AMD, signals his company's growing significance for industry buyers. That he got Michael Dell to join him on stage, reminding everyone of Dell's historical decision to shed its Intel-only strategy and begin offering AMD-based computers, speaks further to Ruiz's growing stature.

• Matt Szulik // chairman and CEO, Red Hat

It's a testament to Szulik's success that he spent 2006 volleying power punches with Larry Ellison, Oracle CEO. Szulik chalked up a win earlier this year when Red Hat acquired JBoss, amid rampant speculation that Oracle was pursuing the Java application server vendor. Last month, Ellison evened the score by announcing Oracle would offer support contracts to Red Hat users at cutthroat prices. In the meantime, Szulik brought Linux deeper into the data center with Red Hat's September beta release of its enterprise-class operating system, complete with Xen virtualization.

• Daniel Warmenhoven // CEO, Network Appliance

Ever pragmatic, Warmenhoven admits that as much as he would love to see NetApp supplant EMC as storage market leader, he might not be able to orchestrate that during his term as CEO. But then again…. Under Warmenhoven's guidance, NetApp continues to deliver solid midrange storage systems and strong financials, all while supporting rapid growth. Watch for NetApp to soar if Warmenhoven successfully transitions the company into a vendor of on-demand and high-performance enterprise-scale systems.

APP INFRASTRUCTURE >

• Shai Agassi // president, Product and Technology Group, SAP

Widely considered to be second-in-command to SAP CEO Henning Kagermann, this Silicon Valley insider is the company's charismatic visionary. SAP is a market leader in CRM and ERP, and it is that influence that gives Agassi his power. He's on a mission to turn SAP into nothing less than the acknowledged leader of the service-oriented architecture revolution.

• Marc Benioff // chairman and CEO, Salesforce.com

Even though application service providers must now be called software-as-a-service providers, Benioff's baby is still the concept's showcase success. He proudly lords over a company that now boasts 25,000 customers. In 2006, he seemed to be everywhere — gracing the pages of business magazines, publishing a book of essays from business leaders and giving keynote addresses. In April, Benioff brought Salesforce.com into technology adulthood when he completed his first acquisition, of wireless application maker Sendia. He quickly followed that acquisition with another. In August, he oversaw the purchase of Kieden, maker of Google Ad tracking ware.

• Aneel Bhusru // partner, Greylock Partners

Well known among the Silicon Valley power set, this former PeopleSoft bigwig currently centers his start-up work around service-oriented software (AboveAll, CapeClear) and storage (PolyServe, TrustedData). He's also funding Workday, the buzzy Web-based ERP start-up from PeopleSoft co-founder Dave Duffield.

See People, page 18

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continued from page 16

• Greg Gianforte // chairman and CEO, RightNow Technologies

When Gianforte predicts that, within the next decade, the bulk of all enterprise applications will be consumed based on an on-demand model, he speaks with the authority of someone who leads the premiere company for on-demand CRM services in large enterprises. Claiming a 90% annual retention rate among enterprise customers, Gianforte has the power of accountability.

• Ray Ozzie // chief software architect, Microsoft

In June, Ozzie landed one of the most powerful titles in the software industry, becoming the chief software architect for Microsoft. His power rests in his marching orders for crafting the company's all-important software-as-a-service strategy.

• Eric Schmidt // CEO, Google

With his Apple board appointment, Schmidt ratcheted up his industry cache. You can't get much cooler than running Google and helping influence Mac (and iPod) development. He hasn't yet cracked the enterprise nut for Google, but he's clamping down hard.

• Ann Winblad // partner, Hummer Winblad Venture Partners

The entire network industry is pinning its hopes on a service-oriented future and Winblad is a major force bringing underlying service-oriented architecture services to market. Her current slate of start-ups includes ERP Intacct, a software-as-a-service vendor; MuleSource, maker of open source enterprise service bus software; and Voltage Security, Web-services based encryption wares for storage, e-mail and mobile devices.

NET INFRASTRUCTURE >

• Brad Booth // president, Ethernet Alliance

Booth heads an organization shaping up to be one of the most powerful in the industry, pushing for Ethernet's dominance in every network nook and cranny, from handheld devices to 100G transport infrastructure in the telecom core. Everyone is on board, with Booth at the top of an impressive lineup leading this charge. For full profile, turn to page 26.

• John D'Ambrosia // chair, IEEE 802.3 Higher Speed Study Group

D'Ambrosia has long been a staple in the development of all things Ethernet but his power in that arena is rising sharply. He worked on the 10G standard and, as chair of the IEEE committee exploring the 40G and 100G alternatives, was a key voice in the group's recent decision to go with the latter. D'Ambrosia also sits on the Ethernet Alliance board.

• Louis D'Ambrosio // president and CEO, Avaya

D'Ambrosio, new to Avaya in July, inherited his power. Market researcher Dell'Oro shows Avaya in the lead of the enterprise telephony market six quarters running. And finances are strong enough for D'Ambrosio to buy the technology needed to stay on top. In November, he completed the acquisition of Traverse Networks, maker of unified messaging and mobility software.

• Charlie Giancarlo // senior vice president and chief development officer, Cisco

Will Giancarlo be Cisco's next president, a position CEO John Chambers vacated in mid-November when he took on the company's chairmanship? Company watchers place him high on the candidate list, suggesting he could easily fill the CEO shoes whenever Chambers decides to take leave of them. Until then, Giancarlo continues bolstering his already respectable industry presence, making the analyst, press and conference rounds to espouse Cisco's expanding next-generation IP and network security dreams.

• Kelly Herrell // CEO, Vyatta

Herrell wants Vyatta to be to Cisco what Red Hat is to Microsoft; that is, an open source thorn in the side of a market-dominating incumbent. In Herrell's case, he's pricking the giant with an open source router. For a full profile, turn to page 23.

• Scott Kriens // CEO, Juniper

Despite 2006 being a year of financial embarrassment for Kriens because of Juniper's ongoing stock options mess, he and his company's cachet continued to grow. Kriens jumped on the network access control bandwagon, scored a big win for the 40G T-series routers, and gunned for the branch-office market by announcing plans to create a J-series enterprise router that includes security, VoIP and WAN optimization. Kriens continued on as a popular keynote speaker — this year talking up the service-oriented architecture.

• Mark Spencer // president, Digium

As the developer of open source PBX Asterisk and founder of Digium, the company that markets it, Spencer is on a roll. In August, he secured $13.8 million in venture funding. In September, his company made headlines when Sam Houston State University yanked out its Cisco CallManager system and put in Asterisk. In October, the company released Version 1.4, adding such features as improved call quality, support for IP faxes and unified messaging. All eyes will remain on the 29 year old whose goal, he says, is nothing less than to disrupt every part of the $7 billion phone market — carriers, business users and gear makers.

• Peter Stanforth // vice president, Mesh Networking, Motorola

Under Stanforth's guidance, Motorola has become a key player in wireless mesh. And, with his evangelism, mesh is becoming the de facto method for municipal Wi-Fi. Although the proposed mesh standard, 802.11s, is still under development, Stanforth is jump-starting the market by releasing MeshConnex products — patented technology he developed at Motorola acquisition MeshNetworks — that he promises will be compatible with the eventual 802.11s standard.

• Mike Zafirovski // vice president and CEO, Nortel

Ongoing accounting scandals that caused Nortel to restate years of financial results coupled with the company's constant quarterly losses nearly caused Zafirovski to be passed over for this year's 50 most powerful people in networking list. But he gained entry by demonstrating his industry might remain a force to be reckoned with. It led to his far-reaching alliance with Microsoft for joint development of unified communications products, a boon to enterprise customers that want solid Windows-based VoIP solutions. Zafirovski also showed increasing influence among the industry with a number of impressive wins. These include a multimillion deal to build VoIP for *The New York Times* and a $20 million contract to build a 35-city optical network in Iraq.

See People, page 20

Juniper NETWORKS

Seeing what employees and visitors really had on their laptops, Bert was glad he'd gotten Juniper's Unified Access Control solution.

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continued from page 18

COMMUNICATIONS >

• Craig McCaw // founder and co-CEO, Clearwire

Since founding McCaw Cellular Communications (acquired by AT&T in 1994 for $11.5 billion), McCaw's name has been synonymous with wireless pioneer. Today, that manifests itself in his latest project, Clearwire, the 3-year-old wireless Internet access company that stands out for its use of WiMAX, a fixed wireless technology supporting 1.5Mbps downstream transmissions and 256Kbps upstream. McCaw could be credited as one of the most powerful driving forces behind WiMAX — his company touts 162,000 customers as of September. Lately McCaw's pioneering spirit has led him to mobile WiMAX; in July, Clearwire began collaborating with Intel and Motorola to push the technology's development and deployment.

• Gary Forsee // chairman, president and CEO, Sprint Nextel

Forsee faces the opportunity of a lifetime — the ability to prove himself powerbroker extraordinaire. That position of power will come with the onset of field trials for the year-old cable venture he orchestrated among Sprint Nextel, Comcast, Cox, Time Warner Cable and Advance/Newhouse Communication. But the risk is high. Even though the Sprint Nextel board recently appointed him chairman, effective at year's end, if Forsee doesn't show his mastery here, and in the process improve the company's ailing financials, he may well be joining former COO Len Lauer and Executive Chairman Tim Donahue in the job market.

• John Scanlon // CEO, Yipes Enterprise Services

Metro Ethernet is hot, and this 20-year telecom veteran has helped light that fire during his two-year tenure at one of its biggest pure-play providers. Scanlon has been widely praised for focusing Yipes internationally and vertically, particularly in the financial and legal services markets. This young company, which Scanlon says might go public one day — big talk in the IPO-leery tech sector — has the trust of some 800 customers, including the Chicago Mercantile Exchange, the U.S. Department of the Interior, Lexus-Nexus and 30% of the top 250 U.S. law firms. Not bad for starters.

NET SECURITY >

• Steve Hanna // distinguished engineer, Juniper

A technical whiz — and much liked by industry peers — Hanna is a respected go-to guy for next-generation security architecture, namely through his development of network access control (NAC) technology. He exercises great influence in setting the NAC standards groundwork, leading both the Trusted Computing Group's Trusted Network Connect and IETF NAC committee efforts. For a full profile, turn to page 24.

• Suzanne Gorman // managing director of corporate information security, Securities Industry Automation Corp. (SIAC)

As security guru for SIAC, the IT arm of the New York Stock Exchange and operator of the Secure Financial Transaction Infrastructure trading network, Gorman is a thought-leader whose work is watched carefully by security industry insiders. She has been a key player in crafting national and regional cybersecurity protection plans and has been involved with a slew of security task forces. That work includes participation with the national Early Warning Task Force and New York State's critical infrastructure task force. Gorman also is a board member and past chair of the super powerful Financial Services Information Sharing and Analysis Center, an organization she founded to facilitate the sharing of intelligence and protection strategies about security threats to the financial services sector. She also influences new security technology as board member of and adviser to start-ups LifeLock and SignaCert, respectively.

• Eugene Spafford // executive director, Center for Education and Research in Information Assurance and Security, Purdue University

When it comes to information security, Spafford's opinion is much coveted. He's a widely sought out authority figure on matters as diverse as privacy and de-perimeterization. This year, for example, Congress solicited his testimony regarding the Veterans' Affairs data breach debacle. His two cents: The data breach shows that the VA faces a matter of policy, not technology.

• John Thompson // chairman and CEO, Symantec

Thompson has begun gazing into his crystal ball, and for the first time sees an uncertain future for Symantec's core product lines. Antimalware features increasingly are embedded into every area of the network from operating system to intelligent switches and network-access control schemes. Not to worry — as one of the most powerful figures in enterprise security, Thompson is in a strong position to manifest a new future. He wants to protect the data itself which, he says, goes well beyond securing the computers upon which the data resides. His Security 2.0 initiative integrates products and services to provide what he claims to be transaction-level protection. Meanwhile, he is leading the company further beyond security and storage. His 2006 acquisitions have gained Symantec agent-less compliance, instant messaging and change configuration management technologies.

• Bill Yerazunis // senior research scientist, Mitsubishi Electric Research Laboratories

Yerazunis stands out among e-mail security researchers as developer of the popular CRM114 Discriminator open source antispam system, which is well known for its high accuracy rates. He's also gained prominence in his role as organizer of the annual Spam Conference at the Massachusetts Institute of Technology. This highly technical and influential spam gathering attracts top vendors, researchers and professors in the field. Always at the forefront of e-mail security research and development, Yerazunis is known for being vendor neutral and looking at the industry with a critical eye.

REGULATORY >

• Christopher Cox // chairman, Securities and Exchange Commission

Cox wasn't at the SEC when it enacted the Sarbanes-Oxley Act (SOX) and, in essence, spawned the intensive next-generation security and compliance programs within enterprises, but he's now its powerful guardian. And guarding it, he is. In May, for example, he took SEC watchers by surprise with his controversial decision that small businesses would not be exempt from SOX rules. His attitude comes through loud and clear in these remarks delivered at a SOX roundtable in which executives from large companies told the SEC the initiative's costs outweigh its benefits: "The Sarbanes-Oxley Act . . . has the potential to improve the accuracy and reliability of financial reporting, but only if it's implemented properly."

• Greg Garcia // assistant secretary for cybersecurity and telecommunications, U.S. Department of Homeland Security

In his new role, which he took on three months ago, Garcia is charged with the ultra-powerful goal of creating an effective strategy for safeguarding the nation's cyber infrastructure. He comes to this revitalized post with widespread industry and governmental backing, which could prove hugely important as he builds policy and brokers interagency and industry support. The power is his for the taking — and let's just hope we don't ever face the true test of his success.

• Kevin Martin // chairman, Federal Communications Commission

In November the Senate reconfirmed Martin for a second term at the helm of the agency that exerts heavy influences on the network industry. Net neutrality is turning out to be the defining power issue of his reign. The republican gave the thumbs up to the AT&T/BellSouth merger but as of press time he was still ushering it through his agency's approval process after net neutrality proponents, supported by the commission's democrats, turned the deal into a forum for their cause. Earlier in the year, Martin also declared that the FCC has the authority to enforce net neutrality violations in both voice and video, should his commission let the concept become a reality.

• Ted Stevens // chairman, Senate Commerce Committee

Unfortunately, power isn't always good, and Stevens (R-Alaska) provides a case in point. The senator, whose comments about the Internet infrastructure led to a rapped spoof, is certainly inarticulate if not uninformed on network technology. Still, by virtue of position, he has great influence over pending telecommunications regulation. As one result of his limited understanding, businesses may end up paying more for network services. ■

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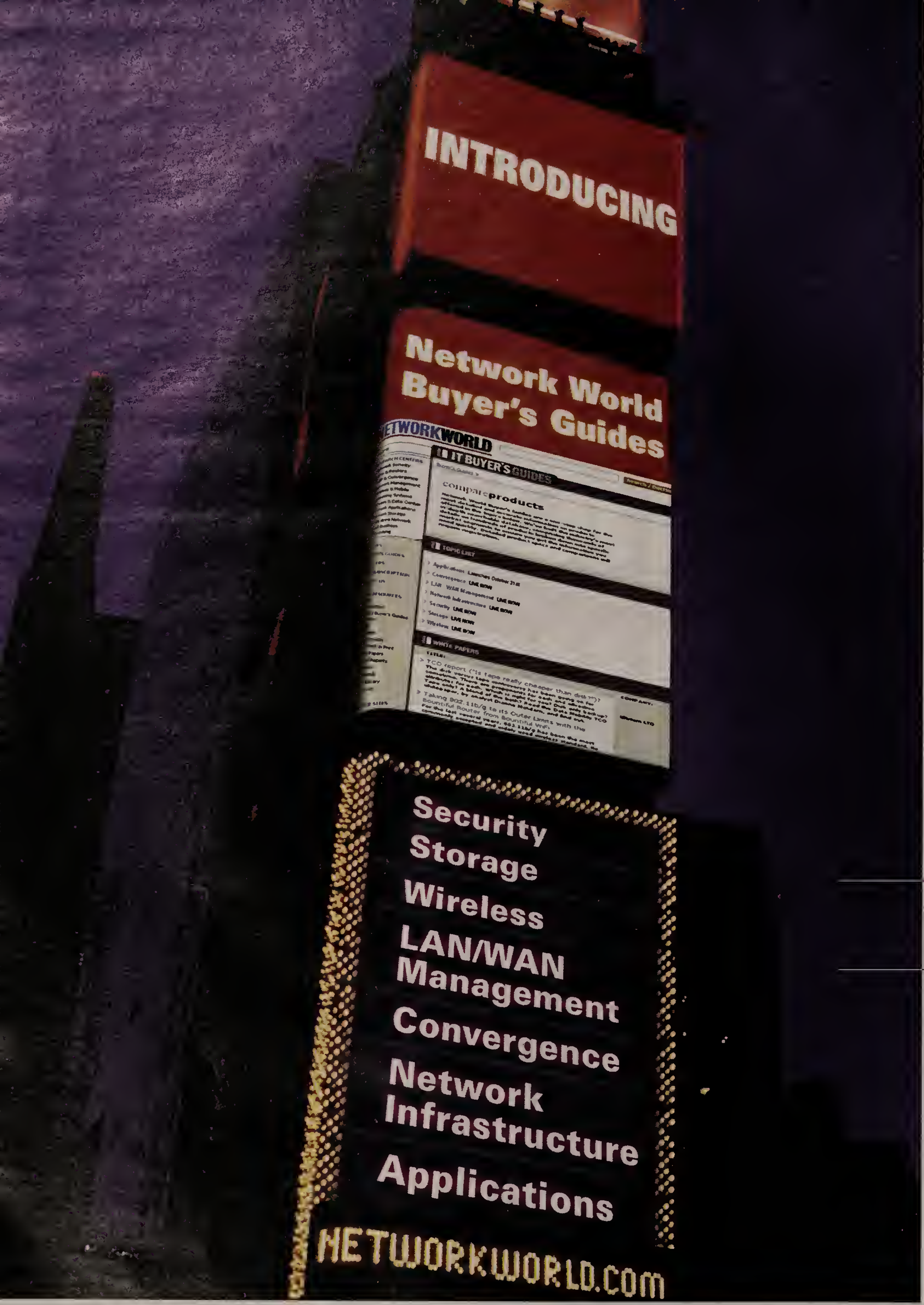

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PAVING THE OPEN SOURCE ROUTE

Kelly Herrell's love of disruptive forces brings him to his biggest challenge yet — shaking up the enterprise routing market

STEPHEN LEDWIDGE

BY PHIL HOCHMUTH

"Never nail your hand to the side of a boat," says Kelly Herrell, CEO of open source network start-up Vyatta Networks. Good advice for anyone, a lesson Herrell learned long before he got into IT.

Herrell, who began working on charter fishing boats at age 11, was once using a gaff hook — a long iron spike driven through a wooden handle — to snag a freshly caught halibut thrashing at arms-length in the water. He missed the fish, he says, and drove the spike through his left hand, pinning it to the boat's hull. "That felt nice," he says wryly.

Now Herrell is after the network industry's big fish — Cisco, Nortel and Juniper. His bait is Open Flexible Router, a Linux-based open source router and firewall platform.

And being a CEO fulfills a career ambition for Herrell, who comes from a small Washington fishing village and fished for a living through high school, getting his captain's license at 18. While at Washington State University, he ran his own Alaskan charters in the summers. But he quit the business upon entering Cornell University to study marketing and economics. "One of the happiest days of my life was when I hung up my boots," Herrell says. "[Charter running] is hardcore. You're up at 4 a.m. and back at 9 p.m, seven days a week."

At Cornell, Herrell became interested in disruptive markets — business-speak coming into vogue at that time (the early '90s). He found his disruptive chance with CacheFlow (since renamed Blue Coat Systems), one of the first among dot-com-era start-ups with novel technology for caching Web content. Herrell became the company's eighth employee in 1996.

Next, Herrell went to Cobalt Networks, a start-up selling ready-made Linux/Apache/Sendmail appliances to feed dot-coms' voracious need for servers. "This was another product category that did not exist before," he says of the sleek blue appliances, which once lined the racks of enormous collocation facilities in Silicon Valley. "I packaged everything together, and let non-technical people easily build an online presence."

Herrell helped take Cobalt public and left the company after it was acquired by Sun in 2000. By then, the blistering pace of the late boom had caught up with him, Herrell says. His next move was to decelerate and spend more time with his new wife, Sharon.

The couple headed to Napa, where they bought a house with a small vineyard, and started the Kelly Martin Winery and a family. "They both have similar gestations," he jokes.

During this time, Herrell and his wife had a son, and Kelly Martin produced two vintages in small quantities, which are hard to find, and sell for as much as $75 a bottle. "The 2002 has great fruit, lots of blackberries, raspberries, and other rich red fruits, with great mouth feel, elegance and softness," according to SecretNapaWines.com

After a few years as a vintner, Herrell says he was ready to get back into technology.

Having seen open source's disruptive force, Herrell took a job as a vice president at Monta Vista Software, a maker of embedded, real-time Linux systems for devices as diverse as cell phones, automated teller machines and carrier/telco switching gear.

"Monta Vista is what I would call 100% bare-ass open source," he says.

Monta Vista's customer base of hardcore telecom engineers, with their extreme technical demands, provided Herrell a brisk reintroduction into the IT industry. He also experienced Linux's power as it transformed the telecom market from one relying on completely proprietary equipment to one that became more efficient and focused on margins and costs. The lean years, 2000 to 2004, played out well for Monta Vista. "Suddenly, telcos moved to standard hardware and an open, common [operating system]," Herrell says. "It was radical."

At Vyatta, Herrell is extending this concept to enterprise networks. The company basically gives away for free what Cisco and Juniper charge thousands of dollars for — a fully functional router and firewall operating system, which runs on commodity Intel hardware. Instead, it charges an annual, subscription-based customer service fee, with varying levels of Web, e-mail and telephone support.

More than a decade has passed since Herrell left the charter business, but he says much of what drove him during those long days is still reflected in how he manages and runs a company. Certainly, endurance is one trait. "You just can't let up," he says.

"And, not to be sappy about it," he adds, "but you've got to listen. In sport fishing, return clientele was 80% of the business. I learned what satisfied customers and [paid] the price when I didn't. Those are some really early lessons that probably in the backwaters of my mind drive me."■

VitalStats

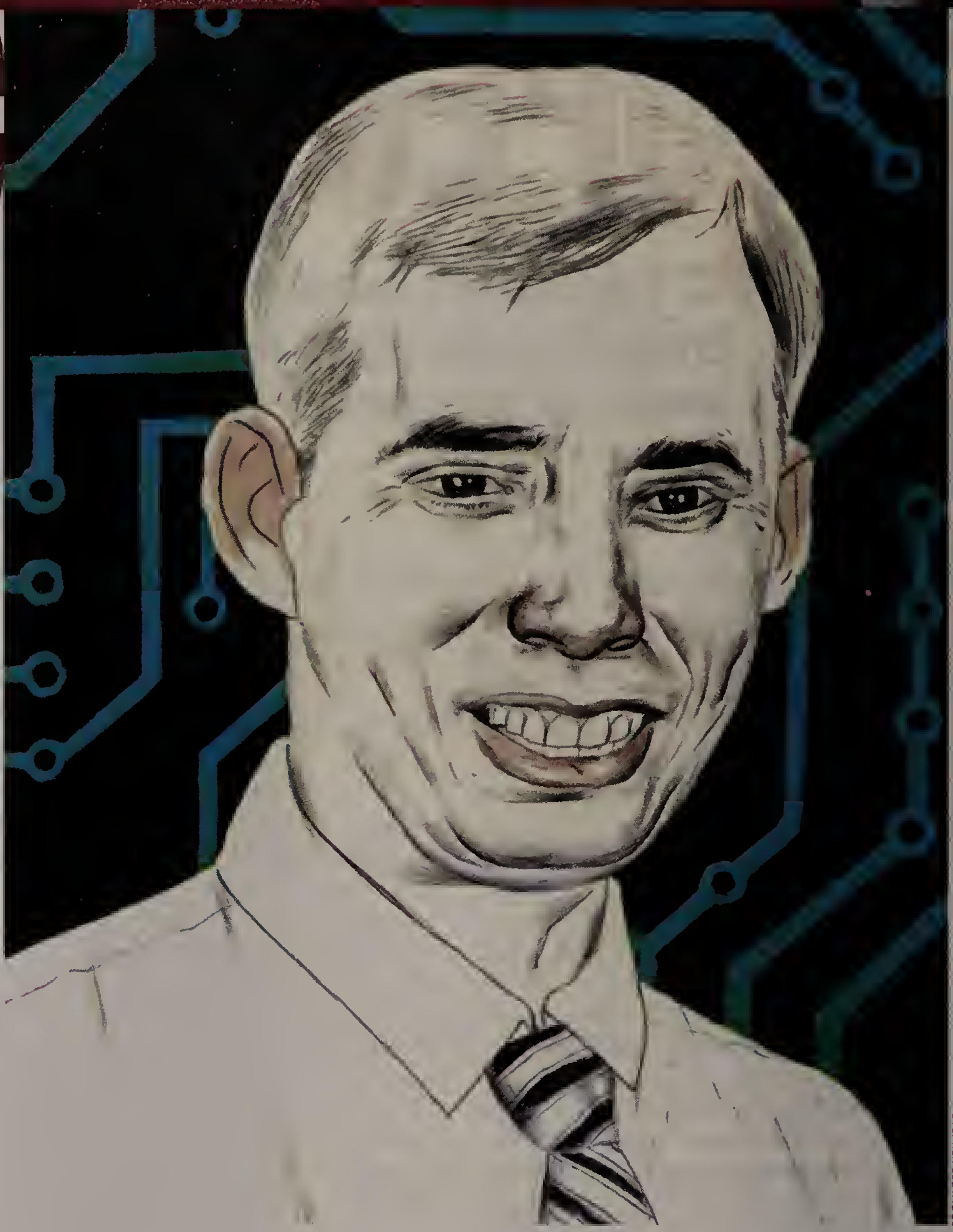
POSITION CEO, Vyatta Networks
AGE 40
YEARS IN INDUSTRY 16
YEARS WITH VYATTA Less than one
MAJOR CAREER ACCOMPLISHMENT
As a marketing director at CacheFlow, he introduced the company's Web caching product to the market. "We had to create the product category, and show how it was a new class of device that solves certain problems on a network."
LITTLE-KNOWN FACT Life's goal, according to his high school yearbook: To be an IBM-er. "I don't even know what that means," Herrell now says. "IBM was the only computer company I really knew [at the time]. And I knew I wanted to be part of this bigger world of [of computing and IT]. I never ended up working for IBM."

POWER 50 **IN-DEPTH**

HE'S GOT THE NAC

Engineering talent and people skills make Steve Hanna the perfect guy to lead two critical open standards efforts in network access control

BY TIM GREENE



STEPHEN LEDWIDGE

Steve Hanna is a technical whiz, but he's diplomatic, too. He'll need both qualities as he helps define what may become the most significant network security architecture to date — network access control (NAC).

As co-chair of both the Trusted Computing Group and IETF NAC efforts, he has influence that will hold sway at the core of NAC open standards work. The work will call on his ability to listen and learn, skills he has consciously developed over the years.

Hanna credits his Harvard University education — he graduated in 1987 with a bachelor's degree in computer science — for his versatility, giving his high school math teacher, Robert Kaplan, the nod for steering him there rather than toward Massachusetts Institute of Technology. When he was accepted at both schools, he asked Kaplan which he should choose, and Kaplan told him to think about himself and the areas in which he needed to grow.

Hanna, who says he was a nerd in high school who was immersed in computers, took Kaplan's counsel seriously. "He was right. I needed to expand my people skills, and it worked out quite well," Hanna says. "I'm much more articulate, less shy and able to listen to others and bridge the gaps between different perspectives much more so than if I had just gone deep on the engineering.

"Whatever facts you learn will be obsolete 10 years after you graduate, if not five. Constantly learning and listening to others — those skills carry you over."

Harvard emphasizes the need to study and understand many different viewpoints and perspectives, he says, lessons he put into practice as an undergraduate when helping organize rallies to protest investment in South Africa. He reached out to a broad spectrum to strengthen his anti-apartheid cause. "We were not just going to invite the Democrats and the Republicans without various groups on the far left, on the right, all different angles, the gay and lesbians. All these different perspectives had to be included," he says.

Radia Perlman, a Sun fellow, calls Hanna diplomatic, careful and tough enough to handle the mix of personalities that participate in standards bodies. She knows Hanna from the years he spent at Sun Labs working on IP multicasting and security, 1997 to 2004.

"You have to have a strong enough hand and also be very careful how you word things, and I think he's capable of doing that with ornery people," Perlman says. You can be successful by being a bully and letting your bully friends dominate the thing, whether they're good or not. I'm glad Steve is not like that."

Kevin Walsh, director of consulting sales engineering at Juniper Networks, where Hanna is a distinguished engineer, says his colleague knows how to listen and make others feel their opinion is valuable. Hanna's gentlemanly demeanor and thoughtful nature don't mean he's a pushover, though.

"You might underestimate him, because he doesn't have to force opinions on you," Walsh says. "If you have any sense of an open mind, Steve will show you why he thinks his answer is right. He will make sure you understand his position. You can agree with him or disagree with him, but it won't be because you didn't understand him."

Co-worker Oliver Tavakoli, vice president of architecture and technology with Juniper's security products group, says Hanna seems to have a good balance between work and his home life. "A lot of times when you see people this good at what they do, it's at the cost of no life outside of work. With Steve, it's all about the kids, all about the wife," Tavakoli says. "It's clear his family is important to him, but not so that you feel he is disengaged at work."

That home life is pretty busy. Hanna and his wife, Libby, have two daughters — Caroline and Ruth, ages 9 and 12. They also have a parakeet, two cats, a beta fish, about 30 gerbils, four degus (South American rodents) and two chinchillas. While the pets are mostly his wife's doing, Hanna says he encourages involvement with animals by leading the local 4-H Club, which he also founded. He enlisted the help of a local farmer, who provided space and animals for about 25 local kids to care for. "I don't really know that much about farm animals myself," he says. "I was in 4-H briefly, and to be honest, I studied how to fix lamps."

The family is also musical. Ruth plays the flute, Caroline the cello, Libby the guitar and Hanna the piano. "We have music sessions in the evening after the kids finish their homework. We'll play some music, sing some songs; it's wonderful," he says.

He also sings in his Unitarian Universalist choir; he's sung in choral groups since he was in junior high school. "Singing is very cathartic for me, a way to blow off steam." ■

VitalStats

POSITION Distinguished engineer at Juniper and co-chair of the Trusted Computing Group and IETF NAC standards efforts

AGE 42

YEARS IN INDUSTRY 19

YEARS WITH JUNIPER About one, with the acquisition of his former employer, Funk Software, where he trailblazed NAC development.

MAJOR CAREER ACCOMPLISHMENT "Two things. First, the research I did at Sun Labs. As many as 30 U.S. patents have been issued on that work. More recently, the development of the Trusted Network Connect architecture and standards."

LITTLE-KNOWN FACT Had access to an IBM mainframe at age 7, sitting on his math-professor father's lap and typing in commands via a teletypewriter.

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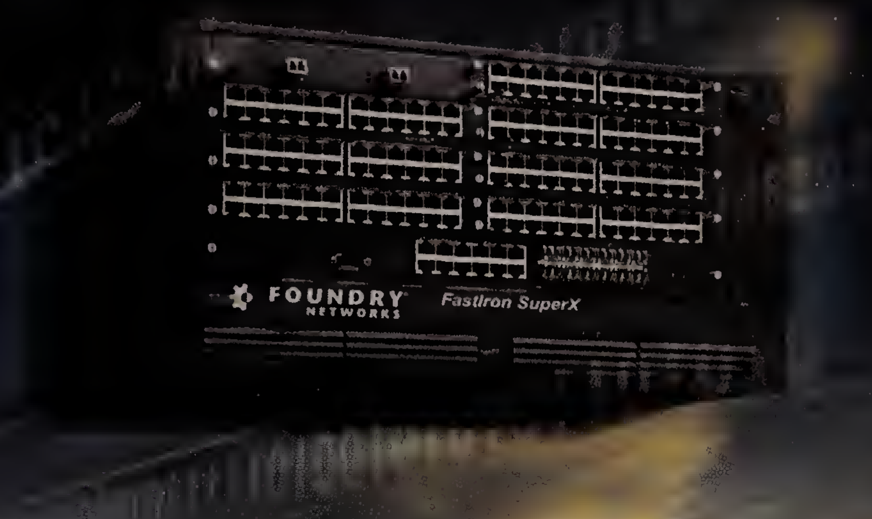

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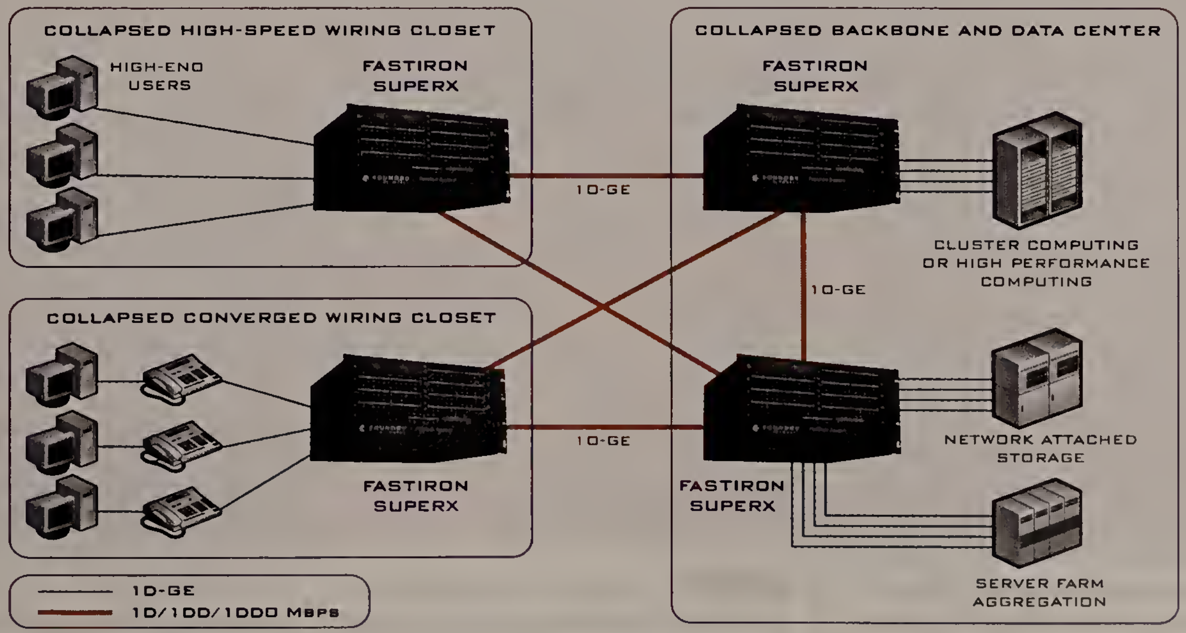

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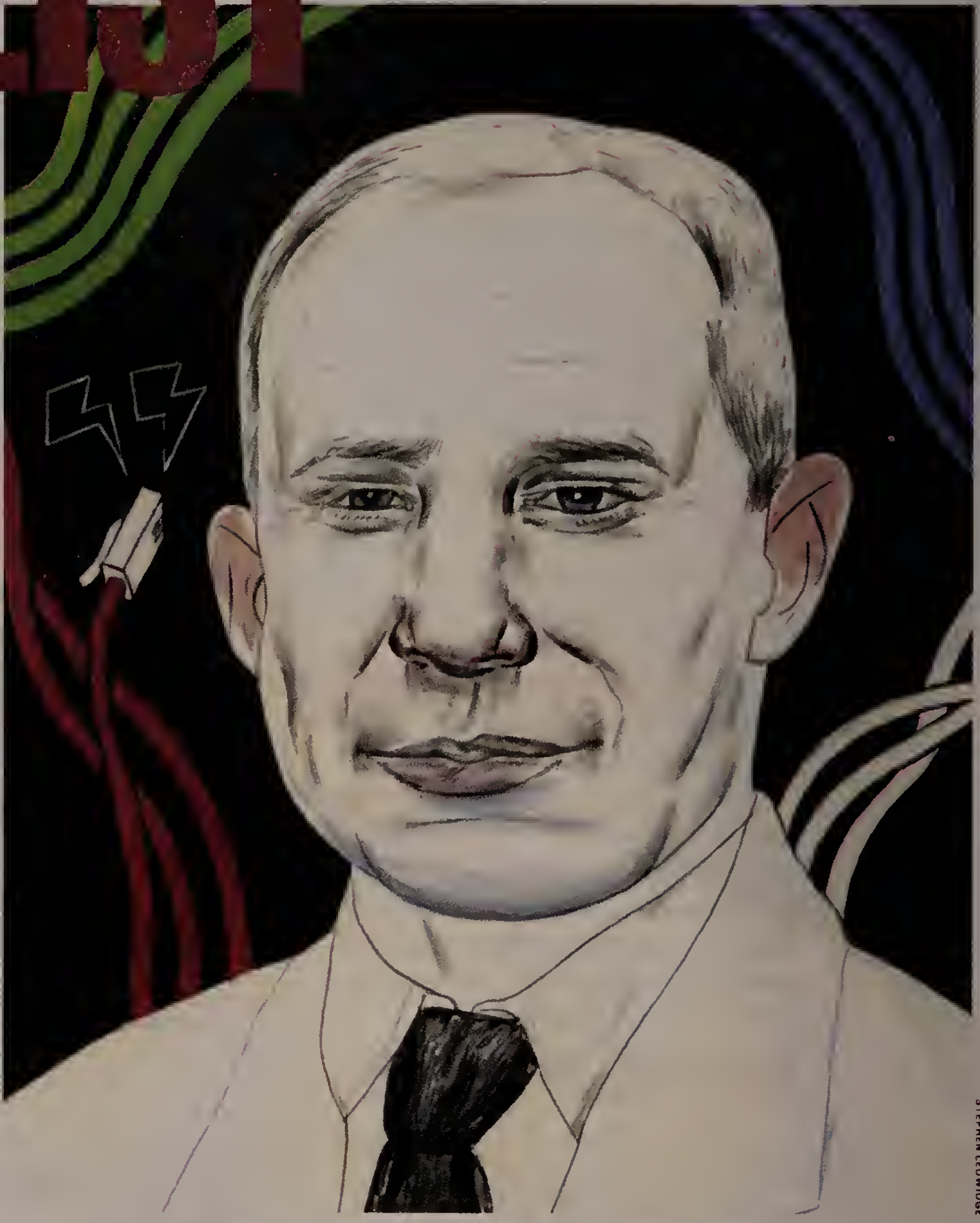
POWER 50
IN-DEPTH

ETHERNET'S EVANGELIST

From the 100G infrastructure to consumer electronics, Brad Booth sees Ethernet, well, just about everywhere



BY JIM DUFFY

As a child growing up in western Canada, Brad Booth always liked to tinker with things

When not skiing or playing hockey, the president of the Ethernet Alliance and senior principal engineer for Applied Micro Circuits Corp. was interested in electronics and the coming of the computer age.

"That kind of got us all really turned on to it," he says of himself and many of his childhood peers. "Fortunately, the schools were able to alter some of their curriculum to accommodate us."

Interest in electronics and mathematics stayed with him all through school and then into college. While at the University of Victoria, in British Columbia, Booth took courses specifically around designing VLSI circuits, graduating in 1989 with a bachelor's degree in engineering.

After college, Booth went into telephony, working on ATM and SONET projects at Bell Northern Research. He got into Ethernet because of a stark, but prescient, comment by a superior at one of his later employers. "My coming into Ethernet was circumstance more than anything," he says. "The president of one of the companies I was working for at the time basically said that it owned 90% of the ATM market, but it was never going to be worth as much as 10% of the Ethernet market. To me, that seemed like a very interesting statement."

So Booth heeded his employer's advice and ended up at a company in Austin, Texas, that was looking for Ethernet chip designers. He was then assigned to attend a standards meeting and the rest, they say....

"It seemed to really fit with what I liked to do," Booth says of attending the Ethernet standards meeting and debating the merits of one proposal or implementation vs. the next. He's been attending and conducting standards meetings ever since, in addition to writing some of the most recent Ethernet standards documents.

He chaired IEEE standard 802.3an-2006, and before that he was the editor-in-chief for IEEE standard 802.3ae-2002. In 2003, Booth received recognition as a senior member of the IEEE.

In addition to helping found the Ethernet Alliance, Booth served as a director and vice president of technology for the 10 Gigabit Ethernet Alliance.

Away from the tedium of standards definition, Booth finds time to ski with his parents in Canada, hike, horseback ride, play squash, and read science fiction and books on Zen. He's not a Buddhist, nor does he practice Zazen or meditation, but he feels the need to relate to people and things in a different way.

"I'm just very interested in how we can treat things in the world and how we can react to things and others," he says. "Anything that can open up my mind is stuff that I like to read through."

Another motivator, naturally, is industry progress. A happy customer makes for a happy designer. "Realistically, we're designing these products for someone who in the end is going to be buying them," Booth says. "And if it doesn't seem to make sense then, you've gotta kind of think, 'Are we really doing the right thing?'"

And now he's focusing that esprit de progress squarely on Ethernet, as the technology matures to the point where it spreads its LAN wings and flies from its nest out into the exciting but scary world of telecom.

Booth helped create the Ethernet Alliance to promote industry awareness, acceptance and advancement of Ethernet-based technology and products. The organization seeks to accelerate industry adoption and remove barriers to market entry by providing a unified voice on IEEE 802 Ethernet projects.

The Ethernet Alliance has started the incubation process for 100 Gigabit Ethernet, has initiated efforts to demonstrate 10GBase-T, 10GBase-LRM and backplane Ethernet interoperability, and is showing consumer electronic applications. The goal is to demonstrate that new Ethernet technologies are ready for deployment and to provide insight into existing and emerging IEEE 802 Ethernet standards.

The opportunities for Ethernet abound, Booth says, especially with advancements such as IPTV and Carrier Ethernet, which is driving the replacement of frame relay, ATM and private lines with the traditional LAN technology. That's probably why the Ethernet market has remained strong, even during the tumultuous telecom and Internet bubble from 1999 to 2003.

"Even through the downturn, there's still been very good volumes," Booth notes.

Enough to unseat SONET as the ubiquitous telecom transport medium? Indeed, Booth says. "I could see Ethernet ending up being predominant in the network core."■

VitalStats

POSITION President, Ethernet Alliance; and senior principal engineer, Applied Micro Circuits Corp.

AGE 42

YEARS IN INDUSTRY 19

YEARS IN CURRENT POSITIONS Less than one year at the Ethernet Alliance; less than six months at AMCC, which acquired Booth's previous employer, Quake Technologies, in August 2006.

MAJOR CAREER ACCOMPLISHMENT Wrote some of the most recent Ethernet standards documents: chaired IEEE standard 802.3an-2006, editor-in-chief for IEEE standard 802.3ae-2002. "It seemed to really fit with what I liked to do," Booth says of contributing to Ethernet standards.

LITTLE-KNOWN FACT Booth reads books on Zen to help him relate to life's experiences.

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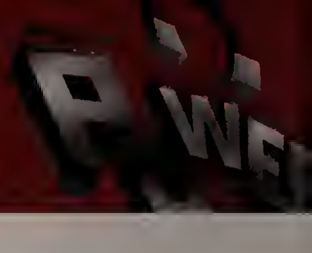
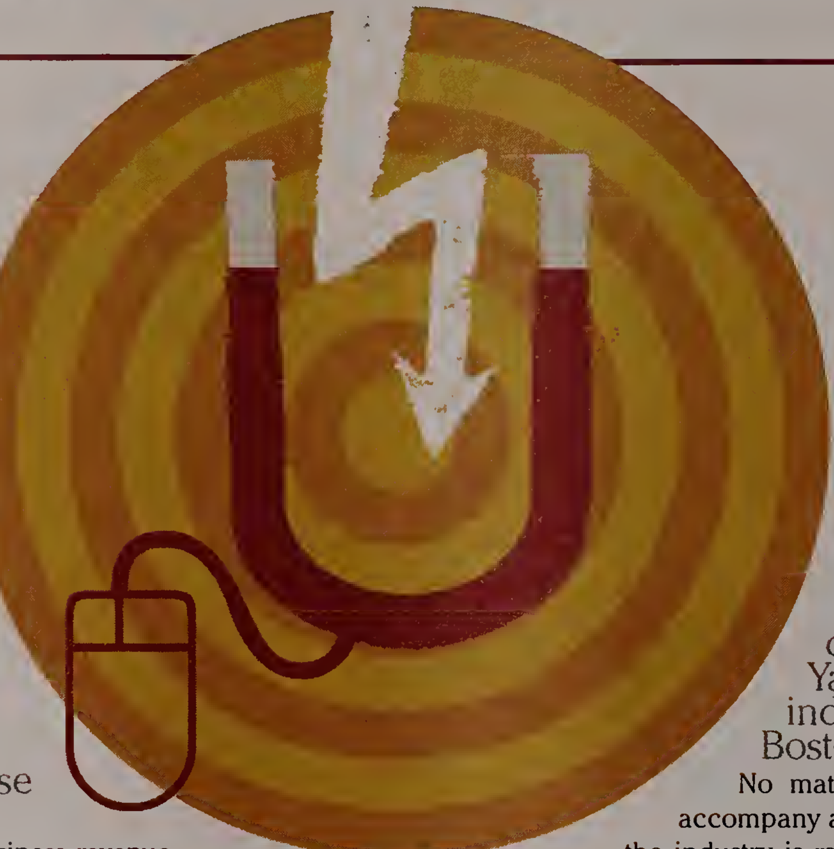


THE 10 MOST POWERFUL NETWORK COMPANIES

Our top columnists give the rundown on what makes each of these 10 companies the biggest power players within the enterprise

FRANK DZUBECK
Industry Commentary



AT&T: THE CARRIER COLOSSUS

AT&T keeps getting bigger but still is managing to execute on all cylinders. It is earning accolades from financial analysts and seeing its stock price rise (buoyed by a potential 10% dividend increase and a $10 billion stock buyback).

During the last nine months, AT&T's wireline business revenue exceeded $43 billion. The last nine months' revenue for Cingular Wireless, which AT&T expects to own fully after it acquires BellSouth, exceeded $27 billion. Projecting revenue for this last calendar quarter at $16 billion for AT&T and $10 billion for Cingular results in a staggering $96 billion annual run-rate. Voice revenues (54.5%) still drive AT&T's balance sheet, but data revenue (28.5%) is growing from quarter to quarter.

Look at these statistics for perspective on AT&T's stature: Its global backbone network comprises more than 535,000 fiber route-miles handling 7.6 petabytes of data traffic per business day; it hosts 30 Internet data centers on four continents, five global network operations centers and 10 global customer support centers; and it has almost 100,000 access points in 150 countries, as well as strategic relationships with 190 carriers.

Throughout its divestitures, mergers and acquisitions, AT&T never lost its corporate-customer focus. During 2006, AT&T expanded its security portfolio to more than 10 services and launched 24 services directed at corporations. Among the carriers, AT&T now has one of the broadest portfolios for corporate-customer services, with options for everything from application management to managed security. Particularly noteworthy for 2006 was the extension to 23 cities of its Opt-E-MAN virtual private LAN service, which has received Cisco QoS certification.

During 2006, AT&T acquired USinternetworking, an application service provider. In 2007, AT&T intends to focus the wholly owned subsidiaries of Sterling Commerce and USi at the corporate service-oriented architecture marketplace.

Although the future looks rosy, one key issue stands in the way of even bigger success — the BellSouth acquisition. At press time, it seemed AT&T's hopes of having the FCC's approval before year's end would not be fulfilled. The FCC opted not to discuss the issue at its Dec. 20 meeting. Still, the integration challenge looms large for 2007.

Regardless, AT&T is well positioned with management, resources, services and strategy to make 2007 an even bigger and more successful year.

Dzubeck, president of Communications Network Architects, can be reached at fdzubeck@ commnetarch.com.

CISCO: THE INDUSTRY JUGGERNAUT

A company as powerful as Cisco deserves a metaphor. You could call it a juggernaut battleship crashing through the waves of the marketplace, seemingly unreachable by the competition. Or, because the network industry seems to have a love/hate relationship with Cisco, you could compare it with the New York Yankees (except there is no network industry equivalent in sight for the Boston Red Sox).

No matter how cynical these metaphors seem, they accompany a message of respect and admiration. The fact is, the industry is rank with competitive jealousy because Cisco is besting the competition on two basic financial fronts: revenue growth — at 18% vs. 14% for the industry; and operating margin — at 27% vs. 10% for the industry. During the last few years Cisco's revenue has grown at a healthy 13% to its present level of $28.5 billion for fiscal year 2006. Financial analysts have even greater expectations for fiscal year 2007, when organic revenue growth is projected to be 14.7% to $32.7 billion. Most interesting is the slow but steady shift in the source of this revenue. While Cisco continues to receive 85% of its revenue from products and 15% from services, its revenue from routing and switching products is declining and its revenue from advanced technology products — such as those for home networks, storage-area networks, IP telephony, wireless LANs and security — is increasing. Advanced technology products accounted for 16% of Cisco's revenue in fiscal year 2005 and for 20% in 2006, and now is running at 23% for 2007. The company's advanced technology strategy is working brilliantly to diversify its revenue stream, protecting it from the next market bubble.

As it shifts to advanced technologies, Cisco must have a comprehensive strategy for enterprise services. Now, for example, it has life-cycle services that help enterprises both prepare and optimize their networks; technical services that keep networks operating efficiently and up-to-date; and remote operations management services. Plus, it has 35 deep products and services for numerous vertical markets, including financial services, healthcare and manufacturing.

Although Cisco spends more than $3 billion per year on R&D, all eyes are on its mergers and acquisitions. It has acquired more than 100 companies since its inception, including nearly a dozen in 2006. Now that it has learned to finance acquisition through debt (Scientific-Atlanta, for example) no IT company with a significant installed base and revenues is safe.

With all this, a constant stream of criticism gets directed at Cisco. Customers complain about prices and product reliability, partners about external competition, value-added resellers about low margins, and the competition about predatory marketing and sales practices. In truth, it is simply jealousy, the wake of power.

— Frank Dzubeck

See Companies, page 30

ANDY POTTS

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continued from page 28

JAMES KOBIELUS
Above the Cloud

IBM: THE STICKING POWER OF SERVICES

IBM is a perennial high-tech success story. Every generation or so, it finds itself at the forefront of the next industry evolution. Fifty years ago, IBM established itself as the dominant vendor of mainframe computing. A quarter-century ago, it pioneered the personal computing age. During the last decade, it has become the world's largest provider of IT professional services, which are the critical glue in a network environment that is moving toward open standards, open source software, software-as-a-service and service-oriented architecture.

IBM has former CEO Lou Gerstner to credit for this latest strategic thrust. He established the IBM Global Services unit in the 1990s, bringing together the firm's consulting, systems integration and managed services offerings across diverse industries in virtually every country worldwide. Since 2002 (when Gerstner left), IBM Global Services' share of the company's total revenue has grown from 40% to more than 54%.

IBM's robust professional services business gives it a plausible exit strategy from the hardware and software markets that were the drivers of its earlier success but increasingly have become commoditized. IBM continues to draw impressive margins from its SOA-focused application infrastructure, middleware, data management and tools businesses, but it's only a matter of time before it finds itself competing in all niches with enterprise-grade open source products.

One of the trickiest challenges IBM faces is determining when to divest itself of its myriad enterprise software offerings, which are facing sustained price pressure from open source alternatives. As an avid participant in many open source initiatives, IBM is fully aware it is laying the groundwork for the eventual demise of its original cash cows. By releasing an open source community version of its WebSphere Application Server, IBM essentially is competing with itself, potentially drying up the license revenue that has been its mainstay in this and other enterprise software categories.

Interestingly, IBM's professional services unit may be its ace in the hole in this open source era. Recently Oracle made a big splash by announcing plans to license, brand, distribute and support Red Hat Linux at half of what Red Hat charges its customers — essentially robbing Red Hat of its oxygen supply. If IBM chooses to play Oracle-style hardball, it could leverage its massive service force to become the world's dominant supplier of maintenance support and integration services for third-party open source environments.

IBM Global Services has no shortage of competitors. Rival enterprise software powerhouses — including Oracle, Microsoft and SAP — will build up their professional services forces through strategic acquisitions. Rival professional services firms — such as Accenture, BearingPoint and Deloitte — will become more formidable brands in the IT services wars. And every open source software vendor will defend to the bitter end its services revenue stream.

In this new network industry order, IBM ultimately will prevail because of its tremendous size, geographic distribution, diversified domain expertise and long-standing customer relationships. Year in and year out, it remains the bluest of the blue-chip vendors in network computing.

Kobielus is a principal analyst with Current Analysis. He can be reached at jkobielus@currentanalysis.com.

IBM'S PROFESSIONAL SERVICES UNIT MAY BE ITS ACE IN THE HOLE IN THIS OPEN SOURCE ERA.

JOHNA TILL JOHNSON
Eye on the Carriers

SYMANTEC: SUPERSTAR FOR INFORMATION STEWARDSHIP

IT executives can be forgiven for wondering a bit about the selection of Symantec as an enterprise power vendor. We're talking about a company that makes consumer antimalware and Windows backup systems — hardly the stuff that lights the eyes of enterprise-technology visionaries. Moreover, desktop antimalware, storage and backup don't seem, at first blush, to have much to do with each other — so where's the value in combining both in one company?

But here's the deal. Symantec quietly and efficiently has been pulling together many key pieces of an overarching strategy around the emerging discipline of information stewardship — something that's front and center on the minds of virtually every enterprise I've spoken with. Nearly 90% of them say implementing an effective information stewardship strategy is vital.

Information stewardship is the discipline of managing enterprise data in the face of ongoing needs for compliance, security, privacy, accuracy and availability. It comprises five key subdisciplines, each having to do with an aspect of effective information management:

- Information protection (ensuring that data is kept adequately private and secure).
- Data-quality management (ensuring that data is accurate and complete).
- Information life-cycle management (mapping the storage infrastructure to the data type, according to the ongoing business value of the information at hand and the compliance policies that govern it).
- Business continuance (ensuring that data is appropriately available in the event of a failure).
- Compliance (validating that data is managed, archived and logged to conform with applicable government regulations).

Critical technologies in developing an information stewardship architecture include storage, backup and recovery — particularly the emerging area of continuous data protection (CDP), which comprises data-quality management tools and security and information protection technologies. Of the latter, messaging security, threat management and antimalware protection are particularly important. You can't get best-of-breed solutions in all these areas from a single vendor.

Starting to see the picture? From its historic strength in information protection (antimalware, threat management) Symantec has expanded to cover nearly all the bases of information stewardship, with acquisitions in business continuity and information life-cycle management (Veritas Software, 2005) and compliance and messaging security (IM Logic, January 2006).

And the trend continues: Symantec recently picked up Revivio, one of the earliest CDP start-ups, joining EMC (which acquired CDP player Kashya in May), CA (which acquired CDP start-up XOsoft in June) and Network Appliance (which picked up CDP start-up Topio in November).

Overall, Symantec's strategy is clear: Through a methodical combination of grassroots growth and acquisition, the company is putting together the pieces that will make it a leading player in the emerging discipline of information stewardship.

So, what's missing? Besides gaining strength in data-quality management, Symantec is doing everything but telling the world about its strategy. That may be a competitor's attempt to stay under the radar of larger players (particularly EMC and IBM), but it could be a mistake. Enterprise IT executives need to hear the story. Once that happens, Symantec can count on lighting up the eyes of technology visionaries everywhere.

Till Johnson, president of Nemertes Research, can be reached at johna@nemertes.com.

MARK GIBBS
Backspin

HP: LOTS OF DIRTY LAUNDRY, BUT STILL POWERFUL

Until September, HP's public face was looking pretty good. Under the leadership of CEO Mark Hurd, HP was starting to see a revitalization of its business that could have made it bigger than IBM. HP's marketing and sales were going great guns, and the company seemed to be doing everything right. But that rosy outlook was about to run into a brick wall.

When the smelly stuff hit the whirling blades, what emerged was a pretty pathetic and sordid tale of board-level silliness that defied belief. On discovering a boardroom press leak, the board's chairperson, Patricia Dunn, instigated an investigation to find the guilty board member. This was no less than a witch hunt, involving illegal data-gathering, surveillance and covert investigation. "Colossally stupid" is how the California attorney general wound up describing the affair.

As a result of this whole mess, one director was ousted, Dunn stepped down to become a director, and Hurd became chairman. Despite the furor and much to everyone's surprise, the company's share price experienced an unabated rise over the entire last year, and the boardroom fracas hardly made a ripple on the chart.

> HP IS SET ON A STRATEGY THAT FOCUSES ON PROFITABILITY, AND ITS PRODUCTS SHOW A REAL TECHNICAL AND MARKETING EDGE IN THE SERVER AND BLADE MARKETS.

Hurd's sales and marketing strategies really are working. According to Yaser Anwar, a contributer to StreetInsider.com, "Nearly 80% of HP's profit increases over the last two years can be attributed to its Enterprise Servers & Storage and Personal Systems Group divisions, due to revamped product lines, cut costs and set prices to maximize profitability rather than revenue."

HP is set on a strategy that focuses on profitability, and its products show a real technical and marketing edge in the server and blade markets. While those edges can — and most likely will — be eroded over the next year or so, HP won't be standing still; unless there are major market disruptions, it should be able to maintain growth and at the least keep its market share.

The company's biggest threat is Dell. To address that threat, HP is starting to make aggressive moves that could change its relationship with its sales network. As reported in Europe, HP is planning to bypass resellers and is test-marketing an approach that will let it go directly to its largest 120 customers in Holland. This bold, and potentially highly profitable, move carries the risk that U.S. resellers may lose their commitment if they think HP might eventually cut them out of the loop.

HP also is moving forward aggressively in its network management business. The company's recent acquisition of Mercury Interactive gives it a whole new customer base to mine. And Mercury's application development management products nicely complement HP's OpenView network management software.

And HP showed its shrewdness with the three-year, $300 million enterprise deal it recently signed with Microsoft. With 2006 sales of $91.7 billion, HP is already bigger than Big Blue and this deal will provide a huge leverage in enterprise sales.

HP's board-level problems are not over, and in the next few months we can expect to see various directors being held accountable for their misdeeds. Still, HP's customers, OEMs and resellers seem convinced that the company has what it takes to satisfy enterprise needs — at least for now.

Gibbs is an independent consultant. He can be reached at backspin@gibbs.com.

MICROSOFT: THE OLD AND THE RESTLESS

Watching Microsoft is like watching the most complex, never-ending soap opera ever produced: In the last 12 months, we've seen Bill Gates decide to shed his day-to-day duties as chief software architect in favor of his charitable work (although the transition will take two years and he will remain as chairman); a slew of acquisitions; the Windows Vista release date change repeatedly; Apple iPod challenger Zune comes to market; a remarkable alliance with Novell; and public admission of what it sees as the growing threat of Google.

While the new-product front is fairly easy to understand, some of Microsoft's other initiatives, such as the Novell deal, are less clear. This came as a surprise to everyone — my fellow *Network World* columnist Dave Kearns described it as "so unexpected that there were widely scattered reports of snowball fights in Hades" (www.nwdocfinder.com/6625).

Particularly surprising were the terms. The two companies said they will release each other from any potential liability for the use of each other's patented intellectual property. Novell will pay Microsoft $40 million to indemnify SUSE Linux users from being sued over possible patent violations, and Microsoft will pay Novell some $440 million for coupons that entitle SUSE Linux users to a year's worth of maintenance (exactly what Microsoft will do with these is anyone's guess).

Many observers see the deal as a bad move on Novell's part, including open source advocates, such as Bruce Perens, who even suggests Novell is the new SCO Group.

Novell may not be behaving exactly as SCO did, but the deal definitely will have some similar and equally undesirable consequences. For example, it appears to make Novell violate the GNU General Public License and so will create yet another expensive and distracting legal furor in the open source world. You have to wonder whether Novell's new best friend intended this all along.

I would take bets that we'll look back in a few years and see clearly that, for what amounts to a rounding error in its coffee fund, Microsoft killed off one of its oldest rivals and once again dragged its nemesis, the open source movement, off track.

What of Microsoft's perceived threat from Google? Gates' recent statement that "this competition is a fun one for both companies" has to be one of the more disingenuous ideas he's tried out in some time. Microsoft really takes the Google threat very seriously. Too bad this is another front Microsoft has come to too late. While it may be able to increase its consumer market share, the impact on the big players, such as Google, IBM, Autonomy, Fast and Endeca, will be minimal at best. Microsoft will remain an also-ran, albeit an important one, in the enterprise search market.

After releasing Windows Vista and Office 2007, Microsoft's big push will be on expanding and enhancing the heady mix of desktop and Internet service-based software that will constitute Windows Live — what Gates referred to as "taking it to the next level."

But what that means for enterprise users is unclear because Windows Live is such an odd collection of mostly beta-release e-mail services, domain hosting, simple hosted applications and games. Even so, Gates' commitment to focus on Live implies that its goal is more ambitious. Windows Live definitely is something to be watched.

However, Microsoft likely will gain significant leverage in the enterprise market through the three-year, $300 million deal it recently inked with HP. Microsoft will use the relationship to build its position as an enterprise application vendor, which will in turn reinforce its operating systems sales.

The bottom line is, as always, that Microsoft's impact and importance can't be underestimated. The company's challenge for the coming year and beyond will be to expand in such business areas as search and Web services, where there already is stiff competition from Google and a whole army of software-as-a-service providers.

Microsoft is going to make 2007 an interesting year and an easy one for us columnists because there'll definitely be lots to write about.

— Mark Gibbs

HOWARD ANDERSON
Yankee Ingenuity

EMC:
THE HOUSE THAT STORAGE BUILT

By rights, EMC shouldn't exist. It began life selling memory cards via telemarketing, morphed into the technical leader in disk storage while IBM, StorageTek and HP were asleep at the R&D switch, and then built on its unique ability to acquire strong niche companies and not screw them up.

Can EMC extend its storage dominance into the right new areas of IT? Competitors have awakened from their technical slumber, and upstarts are nipping at its core market, itself a victim of Moore's Law. EMC has to sell 30% more storage each year to grow 10% in revenue, as the cost per bit drops 13% to 15% a year — compounded.

Look at EMC from a customer's point of view. A CIO of a financial services company put it this way: "I have over 100 vendors in my shop. Every time I turn around my IT people are off to some users' meeting — usually in Florida. I want fewer vendors and I want more from them!"

What is he really saying? First, that he is tired of being the systems integrator for all these disparate parts and he wants vendors that can make all of their parts work seamlessly together. Second, he is saying that "piece parts vendors" with just a slightly better solution will be on the outside looking in. And third, he implicitly is throwing down the gauntlet to EMC: Are you ready to become a truly strategic vendor — with entire solutions — or just a tactical one?

Therein lie EMC's strategy and its challenge. Early technology made the firm, so it had to be first-rate in engineering. Now it is mastering two new disciplines — financial engineering and technical integration. It has bought a gaggle of firms since 2003, pretty much saying it would rather buy good technology — which brings with it a customer base and a trained sales and service organization — than spend 10 years trying to make it. And with the Nasdaq still down and the stock market acting rationally, acquisition finesse becomes a valued skill.

Make no mistake about it — if EMC is going to move into the rarified altitude of a strategic vendor, acquisitions aren't a nice-to-have, they are a have-to-have. To most IT honchos, storage is boring, right? But it isn't boring if you are a financial industry CFO and know you'd better keep every e-mail since the beginning of time or be in violation of your compliance requirements. And storage isn't boring if data backup can't get you to recovery management.

What is Act 2? EMC is vulnerable because it cannot match the hordes of IBM and HP consultants helping customers find their way. So it must pick tangential areas for expansion intelligently. The first new areas were those where storage is integral, such as content management — through the Documentum acquisition, or enterprise storage management — through the purchase of Legato Systems. Now ,with the RSA Security purchase, EMC has moved into security and recovery management and opened another door into the corporation.

EMC gets more than half its business from areas other than storage and is calling itself an information infrastructure company, which tells us — nothing.

But it can see the issues: Corporate networks are complex databases that cry out for help and need root-cause analysis to fix; corporate officers want to drive down the cost per transaction and increase availability; corporate customers want to push the right data down the pipe for new Internet applications.

There are only a few really strategic vendors to corporations — IBM, HP, Oracle, SAP and Cisco. Dell is a special case (and an EMC partner). EMC has the opportunity to play right up there with IBM and HP, if it keeps its storage users happy — which means big R&D spending — if it can buy the right companies at the right price, and if it can integrate the product lines seamlessly.

Anderson, founder of Yankee Group and co-founder of Battery Ventures, is the William Porter Distinguished Professor at MIT. He can be reached at handerson@mit.edu.

INTEL:
WELCOME TO PLANET PARANOID

Here's a virtual conversation with you and Intel CEO Paul Otellini.

You: Good morning, Paul. Please pick which paranoia you would like to talk about today. Advanced Micro Devices? Qualcomm? Texas Instruments? China Inc.? Low-price challengers? Saturation?

Otellini: All of them.

You: That is the right answer! And the great thing is that they are all interrelated! For 20 years, from the introduction of the IBM PC in 1981, to 2001, you could count on the fact that every advance in your microprocessors would be gobbled up by your sometimes best friend, Bill Gates. "What Andy gives, Bill takes" — but by 2001, that started to change. Your strategy of obsoleting yourself and making customers lust for the new-new computer wasn't working anymore.

Otellini: Tell me something I don't know. But don't worry, I have a few power ploys in the works.

You: Let's talk about those in regard to AMD. You used to license your technology to AMD, mostly to show the Department of Justice that competition existed. But now AMD doesn't know its place. It is real, muscular competition. Not only that, it has aligned with the One Laptop Per Child people to provide $100 computers to the Third World, so you potentially are giving it a disruptive weapon.

Otellini: Yep. So I am telling the Chinese that I will sell them $300 laptops and let them pay for them on the installment plan. I have told the Nigerians that I will give them $12 million for teacher training — and won't ask too many questions. Anything to keep AMD from getting the volume it needs to cut my margin further.

You: Speaking of the Chinese, one of your major initiatives is into Flash. Twenty years ago you got out of the static random-access memory and dynamic random-access memory markets because they had become commodities and the Japanese were flooding the market. Don't you worry that the Chinese will do to this market in 2010 what the Japanese did in 1980?

Otellini: It's No. 4 on my worry chart. But I am paying attention to the Third World. I am building special computers for the Chinese Internet cafe business and doing a ton of R&D in China and India.

You: You obviously have that covered, and I am certain you don't ever have to worry about China again. Or India. Let's talk about mobility, your hottest market. It accounts for 25% of your sales and has been growing at 65% per year —while your enterprise market is relatively flat. Clearly you aren't going to dominate the server market the way you did PCs, so you need a new growth engine. You have put your processors, chipsets and wireless networks in a combination to address this. But hasn't Qualcomm, one-fifth your size, stolen the high ground and built a licensing model that is the envy of the world?

Otellini: I know that cocaine dealers study Qualcomm to see what truly obscene profits and products are like. If we had been able to do that with PCs we never would have given the high ground to Microsoft.

You: Speaking of Microsoft, you have paid lip service to open source, but you seem to do as little as possible, as loudly as possible.

Otellini: You noticed? Open source is an evil, commie plot — no, strike that. We believe in open source.

You: Sure you do. What's going on in the home?

Otellini: We love the home. We see Intel managing every home and its various and multitudinous devices, letting consumers download, manage and share digital content.

You: But Hollywood, the music industry, the broadcast industry and the networks are lined up against you — they view you as contentious and as part of the Evil Empire.

Otellini: Great, that's what we really need. A new set of enemies.

You: Have a paranoid day!

Otellini: I always do.

— Howard Anderson

See Companies, page 34

> YOU HAVE PAID LIP SERVICE TO OPEN SOURCE, BUT YOU SEEM TO DO AS LITTLE AS POSSIBLE, AS LOUDLY AS POSSIBLE.

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continued from page 32

DAVE KEARNS
Identity Management

ORACLE: IDENTIFYING A LEADER

That Oracle has landed again among the most powerful companies in the network industry is no surprise. The surprise — the very good surprise — is that it continues to come out on top for many different reasons and in numerous categories. There's no question it's the company that comes to mind when one thinks about database management systems. The 2005 acquisitions of PeopleSoft and Siebel Systems put it in the forefront of "person management" — from both the human and customer relations standpoint. But what grabs me is Oracle's spectacular rise in identity management.

Although Oracle for a dozen years has offered a directory service as part of its applications, CEO Larry Ellison didn't venture to talk about identity management until late in 2001. That's when he offered to provide the tools needed for a national identity system (www.nwdocfinder.com/6626). Privacy advocates and other experts immediately hooted down his idea, and the Renegade from Redwood Shores said no more. But evidently Ellison was studying the identity management landscape quietly. In mid-2004 Oracle acquired Phaos Technology and (some feel more importantly) that company's seat on the Liberty Alliance board. Ellison announced: "Through its membership in the Liberty Alliance, Oracle plans to leverage its expertise in security and identity management to help further the organization's success and development."

That's right, Oracle was willing to take its (limited) expertise in identity management and its (nonexistent) expertise in security and show those Liberty Alliance people how to do federated identity! Many feel that Ellison's middle name is "chutzpah." They may be right, but that doesn't mean Ellison was wrong.

Oracle didn't stop with Phaos. In 2005, Oracle acquired Oblix, OctetString and Thor Technologies, all major players in various facets of identity management. Of course, acquiring companies and actually integrating them into your product mix are two different things.

But Ellison recognizes talent. More important, he has a knack for getting very talented people to work together, and that's what he did with the best and brightest of the folks from the companies that Oracle acquired. He did it so well, in fact, that a bit over a year later, Gartner named Oracle one of the three leaders in its Magic Quadrant report on identity and access management (IAM), saying, "Oracle bought into the IAM market with acquisitions of Phaos (May 2004), Oblix (March 2005), Thor Technologies (December 2005) and OctetString (December 2005). In a short time, it has amassed a very strong management team and IAM technology portfolio. Adding its January 2005 PeopleSoft acquisition for HR management, Oracle is positioning itself to be the 'mover and shaker' in the IAM market. To date, Oracle is fulfilling on its strategy in delivering an integrated product suite. Its IAM road map looks the best of all vendors."

The other two leaders? IBM/Tivoli and Sun. Oracle has driven to the top in identity management faster than either of those companies. It is used to competing with IBM in the database sector. But both IBM and Sun (via their hardware divisions) are erstwhile Oracle partners. All three have well-developed road maps for IAM. All three will be competing at the top for a number of years to come. Significantly, no other challengers offer the full range of IAM products and no other challengers stand within sight of the power of the Big Three. And of the three, only one has a charismatic, get-it-done-now leader. As Red Hat recently found out, it's very hard to stop Larry Ellison.

Kearns, an independent consultant, can be reached at dkearns@vquill.com

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DANIEL BRIERE
Telecom Catalyst

VERIZON: FUTURE-PROOFED

Verizon hasn't had the easiest time justifying its massive investments in fiber (both to the home and to the business), but that's a problem only for folks who spend their time looking at earnings and share prices (which are up this year) and the relative capital spending strategies of carriers.

For those of us in the IT business, however, Verizon has been the leader among large U.S.-based carriers investing in a future-proofed network. When you consider its FiOS fiber-to-the-home efforts, its moves into IPTV for consumers, its aggressive rollouts of Evolution Data Optimized (EV-DO) technology on the wireless side, and its bandwidth-boosting Enterprise Advance initiative, you find Verizon on the cutting edge across the board.

Simply put, Verizon has made itself the U.S. carrier best positioned to meet the future needs of customers, be they Fortune 50 enterprises, distributed enterprises relying on wireless and DSL/FiOS, or even one-person home businesses. And in the face of unrelenting Wall Street pressure, it's stuck to its guns and continued to roll out its networks at a rapid pace.

On top of these core infrastructure moves, Verizon has been leading the way on the applications and services side. When Verizon made the list of the most powerful companies in networking last year, its moves into managed services, such as outsourced security and storage offerings, got the nod. Verizon has leveraged the MCI side of the house to expand these offerings this year, adding such notable new services as telecom expense and wireless device management, and leading the market in VoIP and converged applications.

Everything's not perfect of course. Like any large acquisition, MCI has been hard to swallow at times — we've heard of some losses of key MCI folks and some customer losses as well. And its billing-system integration hasn't been an easy task. But Verizon has some luck here, because big enterprise customers don't have a lot of other choices: Sprint Nextel doesn't have the wireline angle that Verizon has, and although AT&T matches up pretty evenly, it too is in the middle of dealing with its own major acquisition (acquisitions!). The lack of competition helps Verizon here.

Perhaps the biggest downside from the IT perspective has developed from this lack of options. Verizon hasn't been the best at responding to customer desires for openness. We can see this clearly on the wireless side, with features disabled on phones (leading to disgruntled customers and class-action lawsuits) and terms of service (for example, on EV-DO data plans) that lock customers in and keep them from doing what they want to do.

There's a glimmer of hope, however. We see Verizon beginning to back away from these draconian restrictions and starting to let customers use devices in more flexible ways (for example, allowing phone-as-modem plans for EV-DO smart phones).

So who's trying to usurp Verizon's place on next year's power-players list? Well, of course AT&T goes up against Verizon head-to-head in most spaces, and has the scale and scope to compete (particularly if the BellSouth merger goes ahead). And look for new enemies as the cable multisystem operators and Sprint team up to bring consumer, wireless and a surprisingly strong bundle of enterprise services to market next year.

Briere, CEO of TeleChoice, can be reached at dbriere@telechoice.com.

> SIMPLY PUT, VERIZON HAS MADE ITSELF THE U.S. CARRIER BEST POSITIONED TO MEET FUTURE NEEDS OF CUSTOMERS, BE THEY FORTUNE 50 ENTERPRISES, DISTRIBUTED ENTERPRISES RELYING ON WIRELESS AND DSL/FIOS, OR EVEN ONE-PERSON HOME BUSINESSES.

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Tip # 18 By Netcordia

Best Practices Tech Tips, brought to you by Netcordia.

Network Analysis Tip # 18 – Avoiding HSRP Configuration Errors

Why is this important?

Cisco's Hot Standby Routing Protocol (HSRP) is designed to provide router redundancy by allowing two or more routers to backup each other on an important subnet. If one router or its interface dies, a backup router takes over the group's virtual address. Internally, the Cisco router will allocate an HSRP group as soon as the first configuration command has been entered. The problem occurs when a partial configuration is entered or a configuration is not completely deleted. The HSRP group remains active, consuming some (hopefully minimal) level of internal resources. These groups are identified as being in *initial* state – that is they are not yet operational and are waiting further configuration information to become active.

Manual determination:

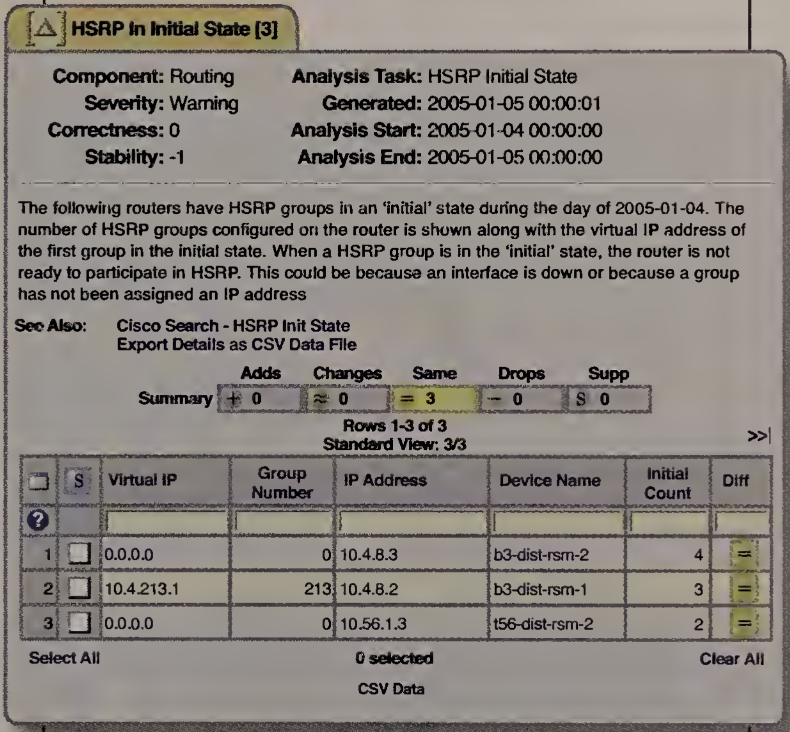
Use the Cisco privileged EXEC command **show standby init** to show HSRP groups in *initial* state. The default command, **show standby** will not display any group in *initial* state. An alternative is to examine the router's configuration file. For example the following configuration will create HSRP group 0 and assign it an IP address of 0.0.0.0, based on the input of one fragment of an HSRP configuration (shown in bold).

```
interface Vlan110
  description { Exchange Servers }
  ip address 192.168.1.2 255.255.255.240
  standby priority 90
  standby 1 ip 192.168.1.1
  standby 1 priority 105
  standby 1 preempt
```

Depending on the specific statements that are entered, a group number or IP address may exist in the HSRP group that is in the initial state. More recently, we have found that some recent IOS releases will learn HSRP configuration information from the HSRP hello packets sent by neighboring routers and will create a new HSRP group that is in *initial* state. The potential problem is whether one of the affected HSRP groups should have been configured differently and redundancy that was designed into the network does not exist.

Automatic determination:

The SNMP data used by NetMRI shows the state of all HSRP groups, providing the visibility into partially configured groups that is not available via the Cisco CLI. NetMRI checks this data and reports an issue for any group that is in initial state. The configuration of the device identified by the IP Address and Device Name field of the issue details should be examined to identify any partial HSRP configuration statements. Look for **ip standby** statements that are missing the group number (if the group number in the issue is zero) or missing an IP address (if the Virtual IP is 0.0.0.0). ■



HSRP In Initial State [3]

Component: Routing
Severity: Warning
Correctness: 0
Stability: -1
Analysis Task: HSRP Initial State
Generated: 2005-01-05 00:00:01
Analysis Start: 2005-01-04 00:00:00
Analysis End: 2005-01-05 00:00:00

The following routers have HSRP groups in an 'initial' state during the day of 2005-01-04. The number of HSRP groups configured on the router is shown along with the virtual IP address of the first group in the initial state. When a HSRP group is in the 'initial' state, the router is not ready to participate in HSRP. This could be because an interface is down or because a group has not been assigned an IP address

See Also: Cisco Search - HSRP Init State
Export Details as CSV Data File

	Adds	Changes	Same	Drops	Supp
Summary	+ 0	≈ 0	= 3	− 0	S 0

Rows 1-3 of 3
Standard View: 3/3

	S	Virtual IP	Group Number	IP Address	Device Name	Initial Count	Diff
1	☐	0.0.0.0	0	10.4.8.3	b3-dist-rsm-2	4	=
2	☐	10.4.213.1	213	10.4.8.2	b3-dist-rsm-1	3	=
3	☐	0.0.0.0	0	10.56.1.3	t56-dist-rsm-2	2	=

Further reference:

Use the Cisco search engine to search for the following named documents:

How HSRP works and the state transitions.

Understanding and Troubleshooting HSRP Problems in Catalyst Switch Networks

Syntax for the **show standby** command for seeing HSRP groups in the *initial* state.

HSRP Support for ICMP Redirects

Written by Terry Slattery CCIE #1026, Netcordia's founder and CTO.

Terry co-authored "Advanced IP Routing in Cisco Networks", has several software patents and a prior company he founded trained over 35,000 network engineers.

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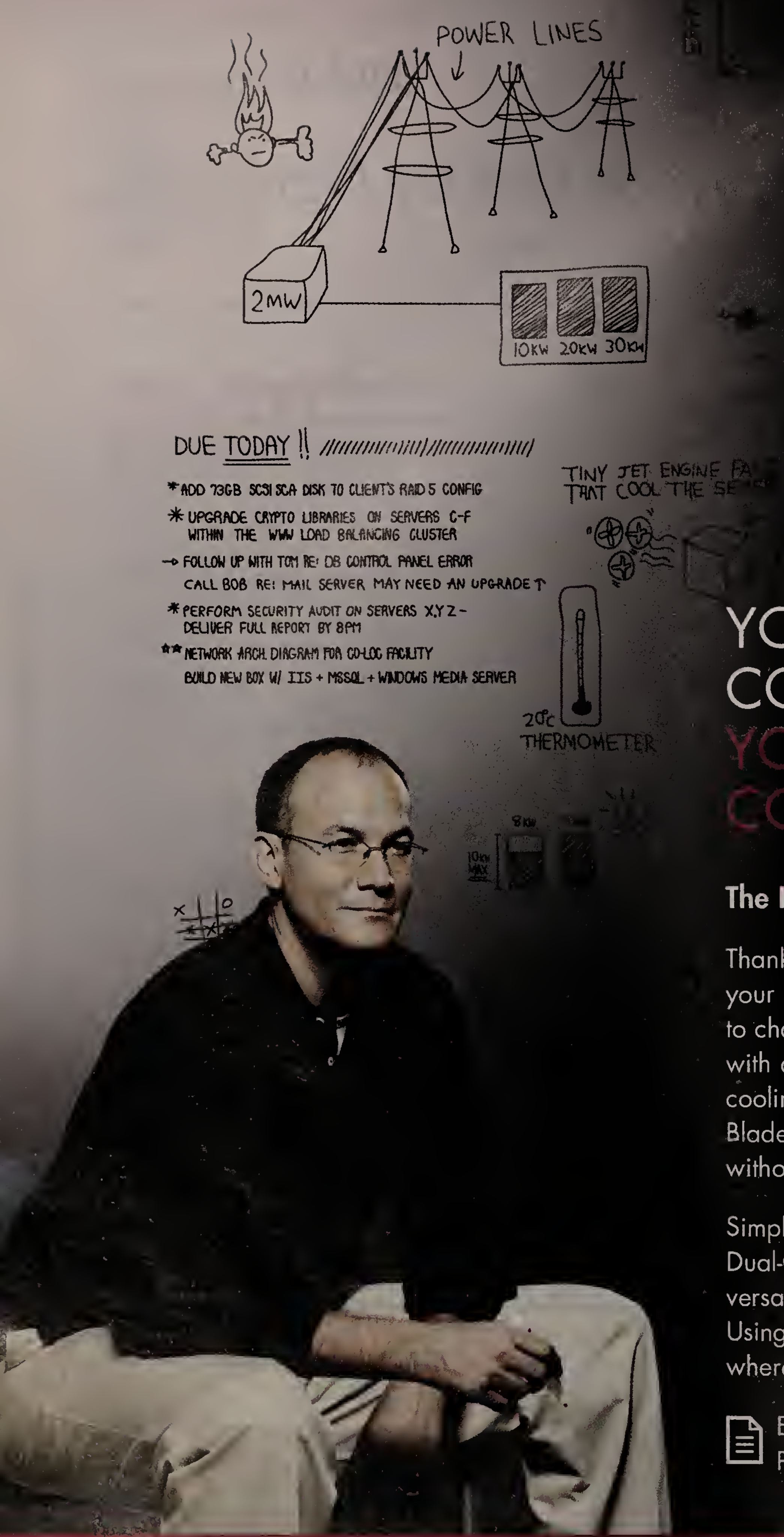
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IF YOU HAD THE POWER...

Linux would be the de facto operating system, identity management would be a breeze and . . . what else? We deemed four of you all-powerful and asked how you'd change the world

BY JOANNE CUMMINGS

Try to imagine this: With the wave of a magic wand, you're suddenly all-powerful. You can change today's network industry in any way you want. What would you do, and how?

We posed such a challenge to four veteran enterprise network executives: Arun DeSouza, manager of global service assurance and chief information security officer at Inergy Automotive Systems in Troy, Mich.; Christopher Paidhrin, IS security officer at Southwest Washington Medical Center in Vancouver, Wash.; Jonathan Campbell, director of technology at First Health of the Carolinas in Pinehurst, N.C.; and Elliot Zeltzer, global manager for telecom security at General Motors in Detroit. In their own words, here's how they would wield their newfound power.

>> If you had the power to alter any vendor's product strategy in any way, what company would you choose, and what would you do?

DeSouza: Symantec — I would cease the strategy of constant new acquisitions and technologies, which is diluting the customer-value proposition. I would focus on consolidation, enhancement and integration of existing tool sets. Essentially, my ultimate goal would be to provide holistic centralized management of the portfolio products. This would give me a simplified, security-management cockpit. The consequent increase in efficiency and productivity for IT staff would add to our bottom line and cascade to additional revenue for Symantec.

Paidhrin: Microsoft — the aspect of concern is that the industry's software-development life cycle is constrained by Microsoft's strategic plan, platform and metaphor, because of the company's dominance.

Open source is making noticeable market-share headway, especially in non-U.S. markets, and it shows the way to a dynamic future .... The brief history of IT has proven what the long history of innovation has consistently revealed: Nothing slows down a good idea faster than artificial control by the few, and inversely, nothing speeds the adoption of a good idea faster than its ready accessibility.

Campbell: Vendors that have stuck with Microsoft Windows as the operating system for their applications or various networking appliances need to change their product strategies. What's wrong with Linux? Cisco's CallManagers, for instance, have been Microsoft for a long time, and now with Version 5.0, they're finally Linux. That [Linux] product strategy will be winnable, but most people just decide to build it on Microsoft because everyone knows Microsoft. That's not a winning strategy.

Zeltzer: We want suppliers to work within a common framework, and all of them need to do a better job. The challenge at GM is we're so large. You name it, we're dealing with it. And when you deal with an environment that large, and you come down to the desktop, you could have maybe 30 elements from 20 suppliers. It's difficult to have

"AS LONG AS THERE IS COMMERCE, THERE WILL BE GREED, CORRUPTION AND POWER, DISPARITY IN WEALTH, WINNERS AND LOSERS. ... ACCOUNTABILITY — THROUGH TRANSPARENCY — WOULD MAKE A DIFFERENCE."

Christopher Paidhrin, IS security officer, Southwest Washington Medical Center

a common build, to get it certified, tested and then create the user experience with any care.

So we've started to say to these suppliers, and we've said it hard and fast: "Guys, here's the framework you need to work within to get something on our desktop, and I don't want to see proprietary products." They deliver their services, I certify the framework and then I don't have to recertify each time a new product comes along.

» **If you had the power to eliminate any ongoing problem with today's network technology, what would you pick, how would you do it and why?**

DeSouza: I would focus on resolving application-performance management. The approach would be a strategic combination of consolidation, optimization and access for applications and data. The enabler is clearly a combination of architecture (Web applications, terminal services, data centers) and QoS technologies. The rationale is that enterprise applications are vehicles for management information and business intelligence to allow proactive collaboration and execution in a competitive, rapidly changing business environment.

Paidhrin: The looming challenge is in identity management. The paradigm of the firewalled perimeter is dying. The service-provider model and virtual network are replacing it. The central issue remains strong, transparent identity access control. Address this issue, and the IT domain will leapfrog into a bright future.

There are numerous solutions, but they are for the most part proprietary, expensive, cumbersome and a hassle for the individual. I would recommend the adoption of an international standards- body model for identity management, where differing technologies and solutions could build on a common set of protocols, encryption algorithms and interfaces to vastly simplify the individual's experience.

Most of us carry car and house keys, wear a name badge at our workplace or have some form of identification on our person. Identity management should mirror this experience, whether we swipe a card, insert a USB key, use a biometric scanner or hold an RFID device [for proximity-sensing devices]. Ease of use and transparency are the keys.

Campbell: I would like to see vendors stop pushing technology and products into the marketplace before they're ready. It seems like the attitude of late is let's get it to the market and clean up the mess later.

Zeltzer: What I've encountered is the mobility conundrum. People have PDAs, mobile phones, BlackBerries and PCs that are mobile, but when we try to collaborate, people spend a lot of time with their mobility tools as opposed to working on the topic at hand. I'm sure you've been in a meeting with five other people, and they're doing five other things and not paying attention. Or you could be in a meeting and a cell phone comes on, and people just rudely interrupt the meeting to go do their cell phone activity. While mobility has strong positives — I wouldn't eliminate the technology — I'd say let's create an etiquette model that helps us work with mobility and collaboration in the corporate environment. We need a model that leverages the benefits of mobility but doesn't create non-productive or distracting environments. We've let the genie out of the bottle. Now we have to create rules to work with it.

» **If you had the power to make one change to how corporate America operates today, what would you do?**

DeSouza: I would make environmental protection a major goal. This would be especially true of manufacturing companies — where a lack of focus on solid, liquid and gaseous wastes causes incalculable harm. However, even for others, focusing on conservation, recycling and minimizing use and waste of pulp and paper products and energy could be extremely beneficial.

Paidhrin: As long as there is commerce, there will be greed, corruption and power, disparity in wealth, winners and losers. I would not fantasize it could be different. Accountability — through transparency — would make a difference.

It is a marvel what the Sarbanes-Oxley Act has done and will do for corporate America. Still, there are forces at work to circumvent this accountability law. If accountability were a true American corporate virtue, then all corporate entities would have an inspector general's office — a truly independent internal affairs function to monitor and ensure policy and behavior compliance. I would propose such a role be constituted in every organization.

This function would be a badge of honor, like an ISO-9000 or Six Sigma certification. It would be a point of pride that says to the marketplace we believe in transparency, honesty and corporate integrity.

Campbell: I would try to stop pushing technology and products into the marketplace before they're ready. You need to have longer beta product-testing times in various and diverse environments. People tend to lab these products up in a clean environment, and it doesn't work.

Zeltzer: I'd like to see corporate America continue the green strategy and continue to be very environmentally sensitive. The greening of America is consistent with a lot of other corporate strategies and ... has a real value at the end.

» **If you had the power to reverse time, what technology development would you stop and make sure it never gets to market?**

DeSouza: Peer-to-peer technologies. The reasons are simple. First, there is the loss of intellectual property and revenue for content producers. Second, there is a loss of productivity, especially among the youth whose focus is diverted from pursuit of productive tasks. Finally, there is also a security threat for corporate environments — with possible loss of corporate knowledge and financial capital and harm caused by viruses, worms and malware via the peer-to-peer connection.

Paidhrin: As much as I abhor the despoiling of the biosphere, I do not have a dystopian perspective of technological developments. Our global culture is built upon Nobel's dynamite, Tesla's alternating current and Oppenheimer's atomic bomb.

The dual-edged sword of technology has revealed itself from the beginning of craft and use of tools. Plus, the irony of removing one technology is the inevitable introduction of an alternative — necessity and creativity being the mothers of invention and innovation.

But if I had to pick one thing to reverse, it would have to be Guglielmo Marconi's theft of Nikola Tesla's patented radio technologies (Marconi worked in Tesla's lab for a short time). The U.S. Supreme Court later validated Tesla's patent claim (U.S. Patent 645576). Tesla was the linchpin of innovation and invention between the 19th and 20th centuries. His inventions include alternating current, wireless communications, electric motors and generators, transformers, transmission systems, lighting systems, seminal advancements in electronics and physics theory and applications, and the list goes on. Had Tesla's rights and royalties for radio been given him, the possibilities for numerous additional inventions and technologies would have been enormous.

Campbell: I would stop the BlackBerry. It's so addictive, and it's become a social shortfall. E-mail is bad enough for people, where they don't want to pick up the phone and talk to somebody, but now you're throwing a BlackBerry in there, too? When you go into a meeting, it's worse than a Dilbert cartoon.

Zeltzer: There is a lot of technology that isn't well-intentioned, like spam and virus technology. Those are technologies that are malicious and in some cases damaging. If I had a magic wand that let me reverse development and prevent it for all time, then spam and viruses would be the top two items.

Cummings is a freelance writer in North Andover, Mass. She can be reached at jocummings@comcast.net.

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"IF I HAD A MAGIC WAND THAT LET ME REVERSE DEVELOPMENT AND PREVENT IT FOR ALL TIME, THEN SPAM AND VIRUSES WOULD BE THE TOP TWO ITEMS."

Elliot Zeltzer, global manager for telecom security, General Motors

BATTLING FOR POWER ON SIX FRONTS

Heated competition in six key areas, including security, storage and Linux, could change the way you build, manage and pay for your IT infrastructure.

BY ANN BEDNARZ

When power players envision new opportunities, they can become so eager for success that they fail to distinguish between a true market need and wishful thinking. Those that put fantasy above reality either don't survive, or don't deliver on their promises as advertised. Only one thing is certain — for every move one player makes in a hot technology area, others will make countermoves.

At stake in these maneuvers is the way you build, manage and secure the enterprise network. Read on for an analysis of six battles for power taking shape in the network industry.

ANDY POTTS

SECURITY: Everyone wants in

Everyone wants to be a security vendor, and Cisco, IBM and Microsoft are no exception. It's no wonder: Even during years of anemic IT spending, security budgets get bigger-than-average boosts.

Sometimes new faces in the IT security world mean good things for enterprises. Microsoft's recent efforts to offer antivirus and antiphishing tools are pressuring the incumbent vendors, including McAfee and Symantec, to improve their wares. "That's spurred the oligopoly to get back to innovating and spurred price competition," says John Pescatore, a security analyst at Gartner.

But not all the big guns belong in the IT security business. Acquiring Internet Security Systems with its intrusion-detection and -prevention appliances doesn't mean IBM will fare well in the world of network security products, Pescatore says. "IBM is not a network company; it's a host, software and services company," he says.

Nor should EMC expect to simply buy its way into security prominence with its purchase of RSA Security. Vendors often rationalize such buyouts with the notion that enterprises are looking to spend their IT budgets on fewer providers. But enterprises aren't going to gamble on an unproven security provider just because the vendor is well regarded in other IT markets.

The bottom line is that enterprise security pros are smart shoppers. Just because Cisco, IBM and Microsoft are off the sidelines doesn't mean they get to control the game. The threats control the market, and smaller specialists with innovative security products will still turn IT buyers' heads. "The big guys are never the ones who react first with new answers to the new threats," Pescatore says.

STORAGE: Serendipity happens

After ignoring the market for years, data- storage vendors EMC, HP, IBM and Network Appliance are eyeing small and midsize businesses (SMB) with new respect. NetAppliance even formed a division, called StoreVault, to pursue SMB customers.

Each has introduced appliances designed to combine ease-of-use with advanced storage features. HP in September 2006, for example, unveiled its StorageWorks All-in-One (AiO) storage systems, which bundle network-attached storage, storage-area network (SAN) and data protection features with wizard-driven provisioning and management tools.

St. John's Episcopal School in Tampa, Fla., is an early user of HP's AiO storage devices. "What we were looking for was a quick way not only to expand the storage of our [Microsoft] Exchange environment, and expand the storage of our normal day-to-day file sharing, but also a way to augment some of my tapes to back up to disk," says Charles Love, IT director at the school. "St. John's was in the market for some type of SAN, but the cost was always too high." The AiO's starting price of $5,000, with room to grow, was a great fit, Love says.

So why the sudden attention? While SMB deal sizes are smaller, the target population far outnumbers the large enterprises on which vendors have traditionally set their sales sights. Plus, SMBs are hungry for better options: The market for entry-level storage systems priced at less than $15,000 is the fastest-growing segment in storage, according to IDC.

While the opportunity is ripe, serving the SMB market will be a challenge for the big vendors. It likely will require building up a new crop of channel partners, because their existing resellers may not provide a pipeline to small businesses. Meanwhile, the storage requirements of smaller companies will continue to get more stringent. That's good news for SMBs, says Paul Myerson, a senior analyst at Enterprise Strategy Group: "They're going to get what they want, because the vendors are going to have to compete."

LINUX: Climbing the desktop mountain

Just how secure is Microsoft's stranglehold on the desktop? Maybe less than expected, given the Redmond giant's recent Novell partnership, which focuses on Windows/Linux interoperability for the server and desktops.

Novell is among a handful of companies with Linux-based alternatives to Windows. Last July it began shipping its SUSE Linux Enterprise 10 desktop, which has an Office suite built off the Open Office project and includes the Firefox browser, Gaim instant messaging client, Beagle desktop search engine, Xen virtualization, and the Evolution e-mail and calendaring client that integrates with Microsoft Exchange Server.

SUSE 10 also integrates with Microsoft's Active Directory and includes a management infrastructure built around ZenWorks — two features with enterprise IT appeal.

Meanwhile, Ubuntu shipped a new version of its Debian-based distribution in October, and Red Hat is set to release its Enterprise 5.0 in early 2007.

Despite the range of options available, analysts aren't projecting large-scale enterprise migrations to Linux desktops. Migration is a costly endeavor and could pose problems with users who are comfortable with Windows. Linux client operating systems have hovered around 2% of market share for the past three years — a share expected to hit just 2.8% in 2009, IDC says.

Some may find the will to convert linked to displeasure with Microsoft's Vista, which started shipping in late 2006 minus some key features originally planned for the desktop operating system. News such as the historic Microsoft-Novell partnership also could help drive adoption, given the focus on interoperability between Microsoft's Office and Open Office.

WIRELESS: Wi-Fi's house of cards

Wireless LAN (WLAN) vendors are readying products designed to comply with the second draft of the IEEE's 802.11n standard, which promises greater Wi-Fi speeds and range. Standing by to certify these "pre-n" products next year is the Wi-Fi Alliance, which caved in to pressure to create a program for qualifying draft 802.11n high-speed WLAN products ahead of formal IEEE standards ratification.

It's not the first time certification will precede standardization: The Wi-Fi Alliance certified elements of the 802.11i security suite ahead of standards approval in 2001. But at the time a legitimate security gap needed filling. Today it's hard to argue that enterprises can't wait for 802.11n, and they should, says Paul DeBeasi, a senior analyst at Burton Group.

Consider what happened when vendors rushed to deliver products with better security than those based on Wired Equivalent Privacy (WEP). "Enterprises bought the first products with WEP, and then they were so desperate for security, they bought the prestandard version, called Wi-Fi Protected Access, or WPA," DeBeasi says. Once the 802.11i standard was complete, vendors delivered WPA2 gear. "Now enterprises have got some WEP gear, some WPA gear and some WPA2 gear, and they're trying to make all that stuff work. It's a mess."

On the positive side, some certification of the forthcoming pre-n products is better than none at all. "At least there's some semblance of testing for some level of interoperability. But it's not really what buyers need, which is a fully standardized, fully certified product," DeBeasi says.

John Turner is keeping close tabs on the 802.11n standard's progress and expects to upgrade the wireless gear in place at Brandeis University to support it, but not before the standard is ratified. "The problem tends to be that there are often two camps, and when the standard is ratified they often combine the two, making prestandards equipment operable but not fully compliant," says Turner, who is director for networks and systems at the Waltham, Mass., university.

Turner has been through the drill before, having invested in prestandard 802.3af Power over Ethernet gear, which today is not fully compliant. In that case he had no choice, because of the timing of a campuswide deployment of VoIP phones. But he doesn't plan to go down that road with 802.11n.

ENTERPRISE APPS: The services challenge

Dominant business application makers SAP and Oracle face increasing competition on multiple fronts. For starters, software-as-a-service vendors are aiming their wares at midsize and large enterprises. While software-as-a-service products have traditionally prospered in departmental settings, more enterprises are considering their use for mission-critical processes.

An example is Workday, the venture PeopleSoft founder Dave Duffield launched in November to provide hosted ERP applications, beginning with human capital management. Workday isn't bound by legacy ties; it has the advantage of building its software around XML, Web services and service-oriented architecture.

IT executives appreciate the flexibility of a modern architecture. One of Workday's first customers is San Diego biotechnology firm Biosite, which has grown from a $50 million company with 300 employees in 2002 to a $300 million business with 1,100 employees today.

"That kind of growth puts a lot of stress on the infrastructure of an organization," said Suzanne Zoumaras, Biosite's head of human resources and IT decision-maker, at Workday's launch event. "We needed to replace a legacy system that we outgrew the day we implemented it."

Biosite chose Workday for its flexibility, which lets users make process and configuration changes on the fly without resorting to the bolt-on tactics of legacy systems. The hosted model also helped seal the deal, Zoumaras said: "In this day and age of technology development, to invest in a solution that isn't hosted seems archaic."

> **"IN THIS DAY AND AGE OF TECHNOLOGY DEVELOPMENT, TO INVEST IN A SOLUTION THAT ISN'T HOSTED SEEMS ARCHAIC."**
>
> **Suzanne Zoumaras,** IT decision-maker, Biosite

Software-as-a-service adoption is occurring in many other IT areas along with ERP, such as procurement, compliance management, document management, e-commerce and CRM.

Meanwhile, as software-as-a-service vendors continue to eat into SAP and Oracle's new license revenue, a crop of specialists is taking aim at the stalwarts' bread and butter: support and maintenance revenue.

Vendors such as netCustomer and Rimini Street built their businesses around providing independent maintenance and support services for Siebel, PeopleSoft and JD Edwards products for less money than Oracle charges.

"There's a huge disruption that's starting to play out in the support and maintenance part of the market," says Josh Greenbaum, principal at Enterprise Applications Consulting. "If you're a company that doesn't want to spend 16% to 20% on maintenance for a product you may not plan to upgrade, why pay full price?"

It all adds up to more options for enterprise application buyers, who can enjoy the pressure newcomers are placing on the old guard.

IP MULTIMEDIA: Carriers' rocky road

Carriers' plans for delivering the next wave of services depend on IP Multimedia Subsystems (IMS), an architecture conceived to help network operators produce and provision IP services more quickly while protecting their existing technology and infrastructure investments.

IMS supports IP multimedia applications using Session Initiation Protocol as the signal for creating and terminating sessions. IMS isn't a prerequisite for IP-based services, such as VoIP, fixed-mobile convergence or IPTV, but it can help carriers launch and manage these services more effectively, says Ari Banerjee, senior analyst at Yankee Group.

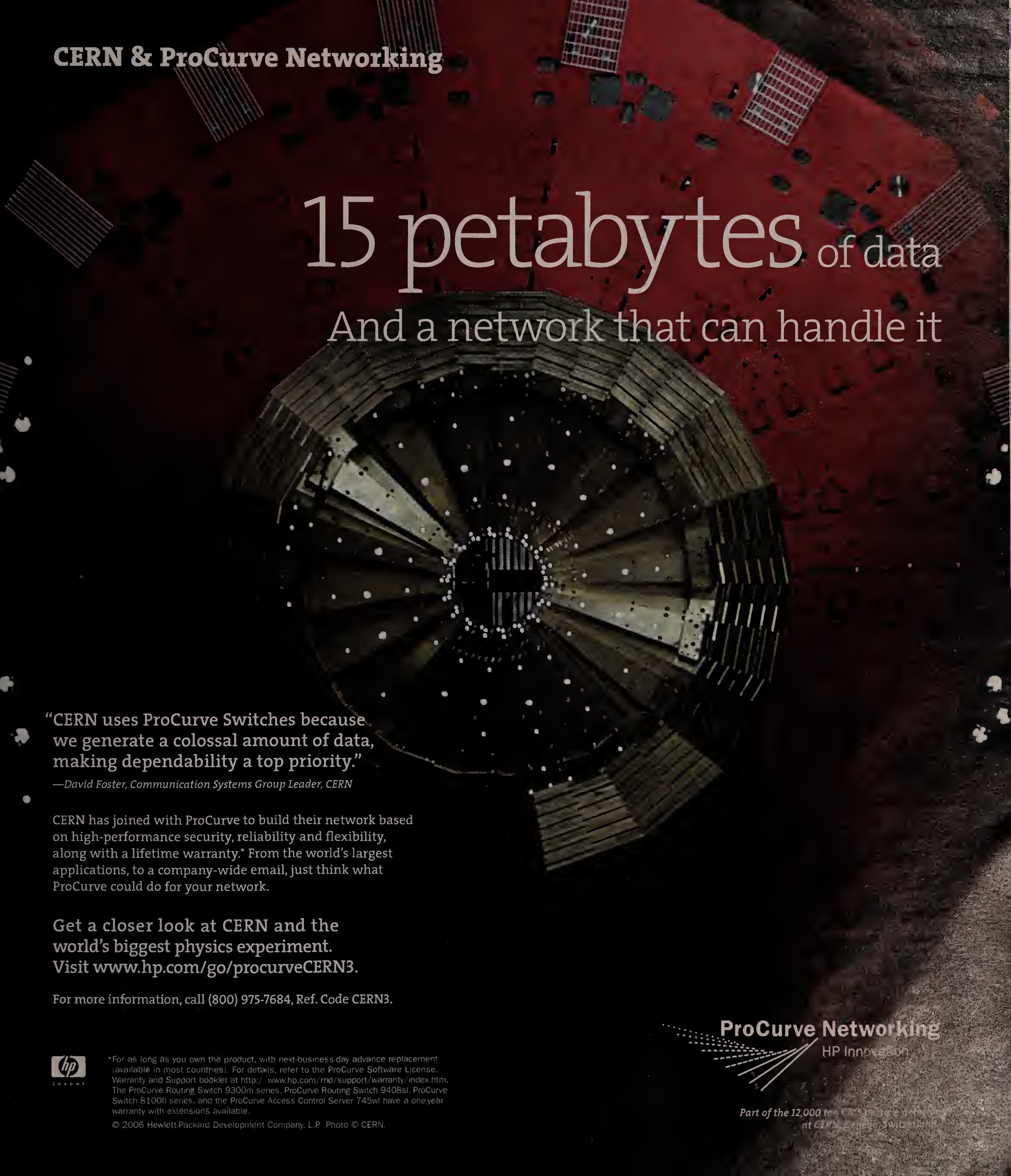
"The pressure on telcos is coming from guys like Google, Yahoo and MSN, which aren't tied to any legacy assets and can launch service after service," Banerjee says. "For traditional telcos, a service launch takes about six months to a year," because of infrastructure challenges and the complexity of back-office systems, such as provisioning and billing. IMS can help create an environment that enables faster service launches by isolating the application layer and services development from network specifics, he says.

IMS is a work in progress, and carrier migration to the architecture won't happen overnight. There are interoperability, QoS and security wrinkles to iron out, for example. In addition, the standard — which was first developed as reference architecture for 3G wireless networks — isn't complete.

Initiatives such as A-IMS, or Advances to IMS, are further adding to the uncertainty. Led by Verizon with support from Lucent, Cisco, Nortel and others, A-IMS proposes architectural enhancements to the existing IMS standard, but not all parties are on board.

Nonetheless, there are dozens of IMS trials ongoing around the globe. Operators of fixed and mobile networks understand it will take some investment before they see big returns. ABI Research forecasts service providers will generate nearly $50 billion in revenue from IMS-enabled applications in 2011. In the meantime, they will invest $10 billion over the next five years to power new services for business customers.

That's good news for network equipment vendors such as Lucent, Alcatel, Nortel, Nokia and Ericsson, which are building out their IMS-compliant product lines. For enterprise companies, the promise of IMS is a better array of applications that can be accessed from anywhere, anytime, regardless of users' connection devices. ■



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THREE EASY WAYS TO GET MORE POWERFUL

Getting 'street cred' with executives, staff and users doesn't have to be tricky

THE Signature SERIES SIGN-OFF

BY SANDRA GITTLEN

In the world of IT, amassing personal power is all about boosting credibility. As Andy Avila, IT and security manager at San Francisco law firm Cooley Godward Kronish says, "Credibility brings power because with it plans have a better chance of standing for themselves."

So how do you go about increasing your credibility? Avila and others share these tried-and-true tips.

1. Focus on clear communication without the techno-babble. "A lot of IT people grow up in the IT world. To expand their role and become more important to the organization, they need to learn to speak business," says Paul Lemerise, executive services partner at consulting firm Tatum.

At Colorado State Employees Credit Union, that means sparing executives and other managers detailed technology explanations, says Tom Gonzales, senior network administrator at the Denver organization.

Instead, he translates what he wants to do with the technology into how it affects the bottom line. "They're not going to be impressed with how successfully I can rewrite the code on a PIX firewall. Instead, they want to know that I can upgrade the firewall without hindering productivity," he says. "I need to show them that I took steps to avoid inconveniencing our customers and that I understand it's not about the technology, but about serving the customer."

2. Prioritize technology training for you staff. Don't make the mistake of under-using your training budget, says Donna Manley, IT senior director at the University of Pennsylvania in Philadelphia. Taking the time to improve your team is critical for morale and improving your overall approach to technology, she says.

As an example, when Manley was charged with bringing the school's data center to the next level, she sent her team through training to update their skills. "The better they are, the better I am," she says.

Avila also is a big believer in training. "A lot of our training is technical so we [learn to] understand the systems and technologies we're going to be implementing," he says. He encourages his team to get third-party and vendor certifications, as well as attend seminars and join legal services peer groups.

"When you stand up before executives to propose or defend a project, you need that education behind you to gain credibility," he says.

3. Create opportunities for regular face time with users. If your user base uses "we," "us" and "our" when talking about IT projects, then you know you've successfully positioned IT as a critical part of the organization, Lemerise says. He recommends putting yourself in your users' shoes when assessing a problem. Too often, he says, IT managers have blinders on and solve a particular network issue that doesn't address the overall problem. For instance, if a user at a remote site is getting poor performance, the IT manager may tweak that person's computer instead of considering that an increase in bandwidth to that office might improve everyone's performance and boost overall productivity.

Manley keeps in touch by participating in the university's IT roundtables and power user groups. "These groups help precipitate the type of interaction we need" to understand concerns, she says.

Face-to-face communication is a must for building credibility, Avila adds. His team meets with users as much as possible, even though the firm's eight locations are across the country.

"I like meeting people on the front line — the partners, associates, secretaries and administrative staff — who need the help desk support," he says. "When we do cutovers, we make it a point to do floor support in conjunction with phone and help desk support. That way, when they call in later for assistance, it brings a level of comfort, confidence and credibility to how they view our team."

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> **Donna Manley,** IT senior director, University of Pennsylvania

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Gittlen is a freelance technology writer in Northboro, Mass. She can be reached at sgittlen@charter.net.

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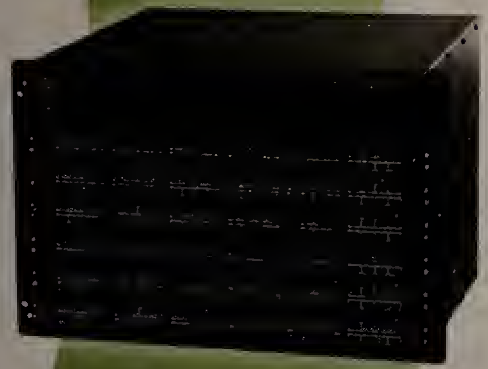

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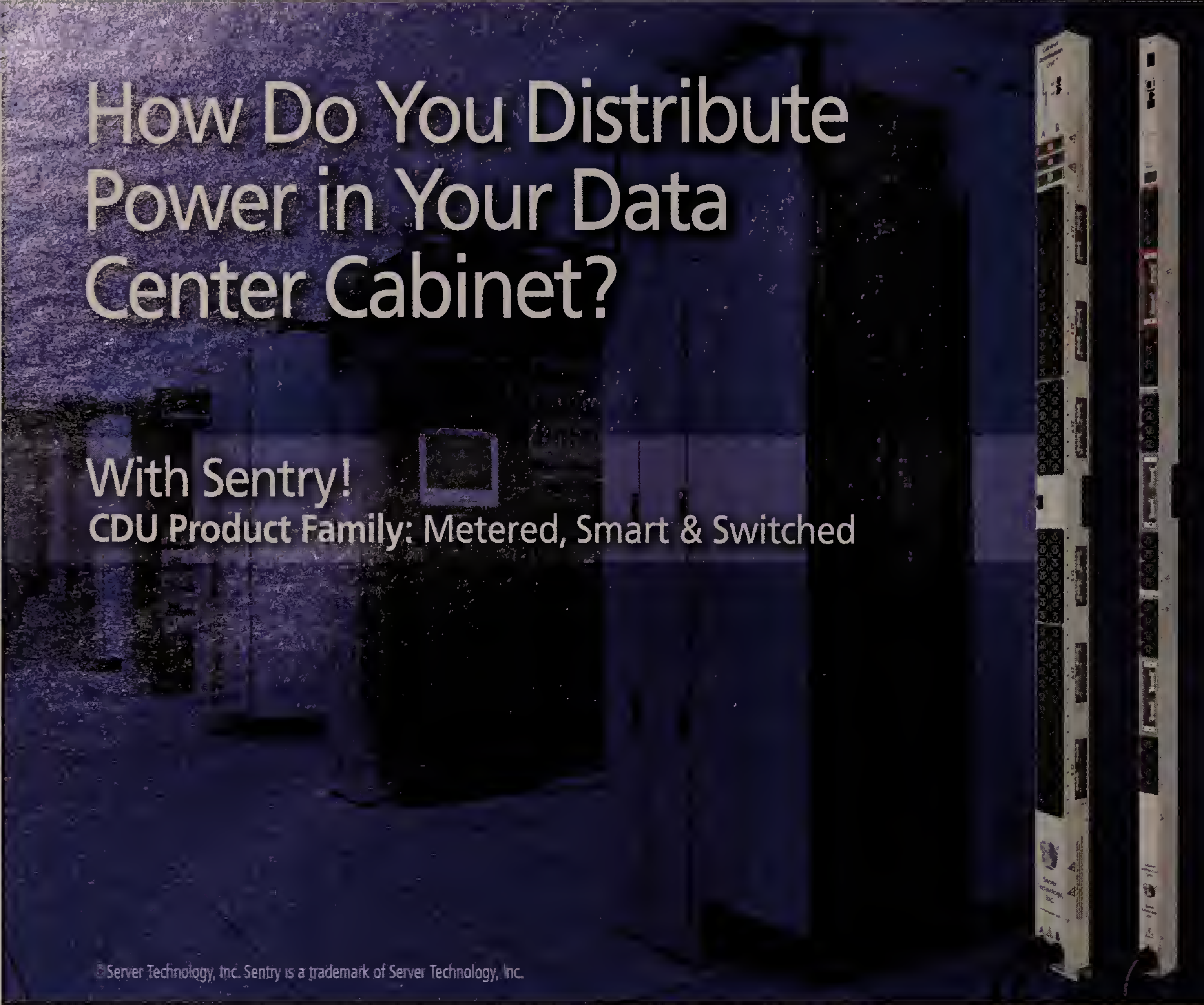

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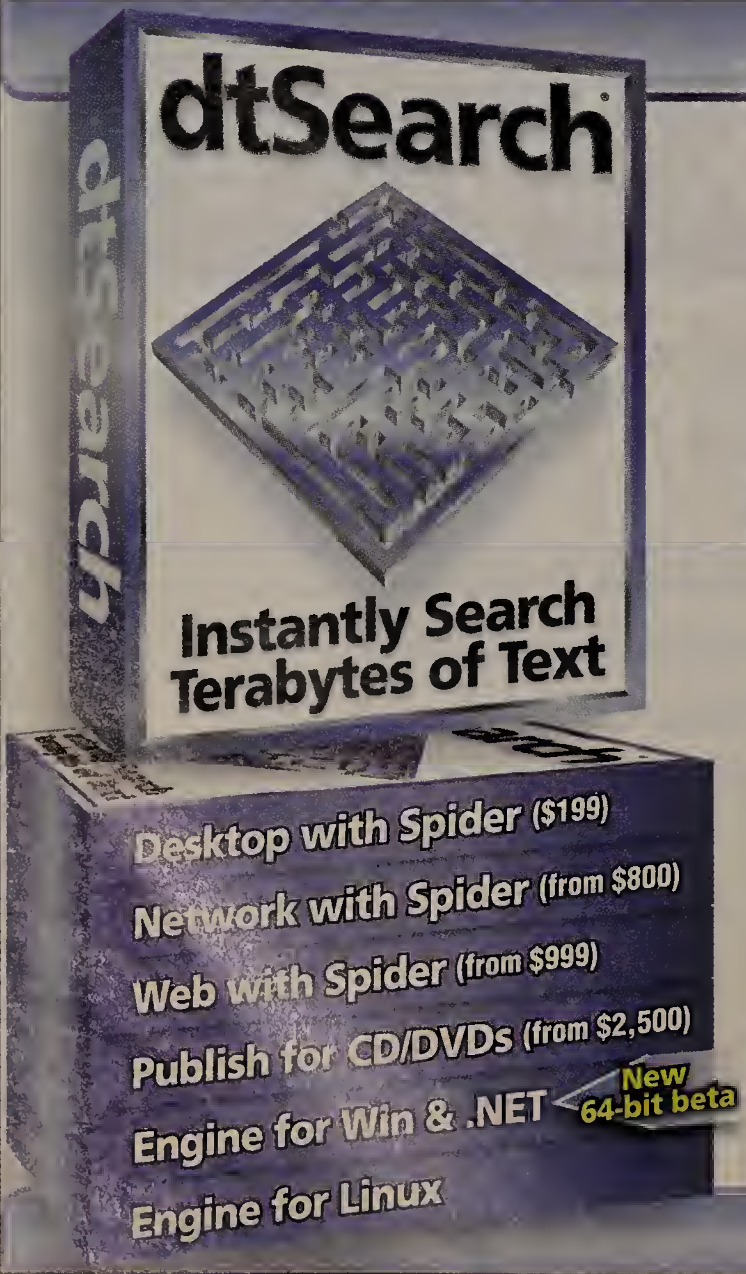
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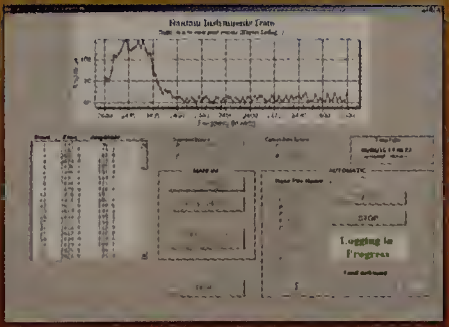

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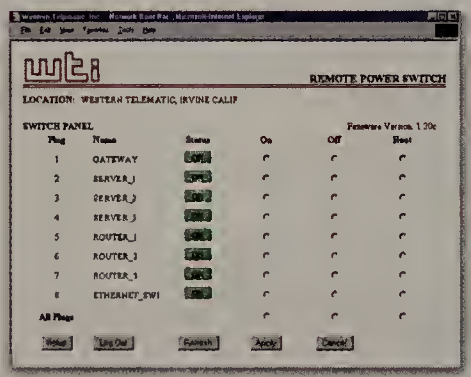

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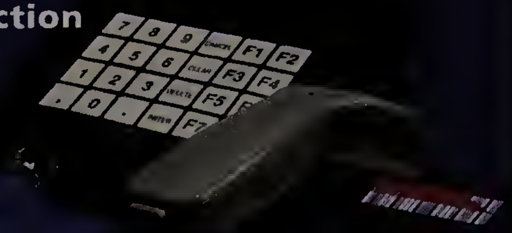

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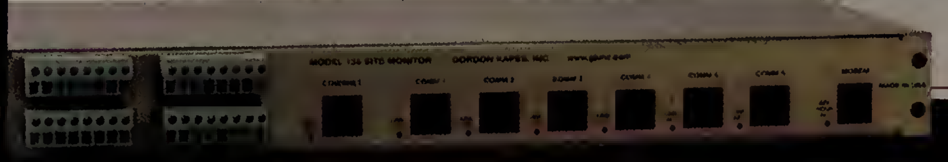

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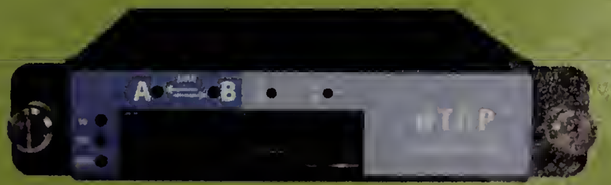

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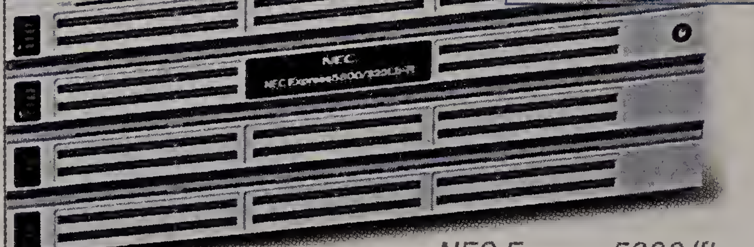

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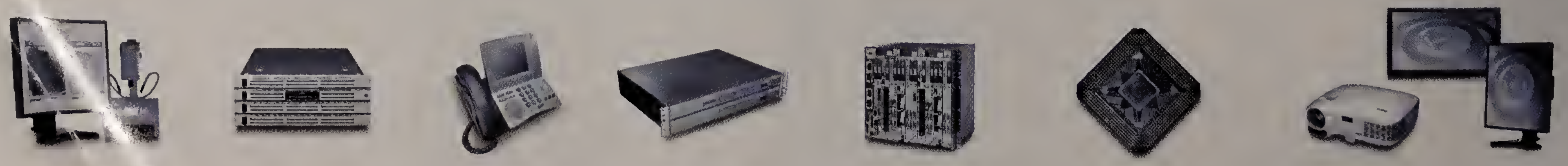

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